GEOGRAPHICAL DISTRIBUTION OF POPULATION CHARACTERISTICS IN GHANA: AN ASPECT OF POPULATION GEOGRAPHY.

By

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ABSTRACT: Geographical Distribution of Population Characteristics in Ghana: An Aspect of Population Geography

Several countries of tropical Africa have, or are preparing, schemes to improve the economic and social conditions of their peoples; but development plans which were not based on adequate information about the personal attributes of the population in question are bound to founder. For most tropical African countries, the basic data are not only incomplete or unreliable; they are often absent. Frequently, knowledge of the population numbers alone has been assumed to be enough, and the attributes thereof have been overlooked. This has tended to give a static, depersonalized picture of the population.

Influenced by both biological and institutional factors, the characteristics of the population including the age and sex composition, occupational structure, mobility, etc., could promote or hinder economic development; conversely, the latter could profoundly alter the basic nature of the former; these characteristics determine the population's response to both external and internal stimuli, and form its internal logic which propels or retards its growth.

The present author contends that although knowledge of the characteristics of the population is fundamental to an adequate . understanding of its trends and distribution, it is a much neglected aspect of the population geography of tropical Africa.

Both the population data of Ghana from about 1850 to 1966, and the results of field work by the present author were used to illustrate the type of analysis urged, and to show that this treatment could be

used in evaluating data obtained from censuses, surveys, etc. Sources of difficulties in the demographic data were identified, and suggestions made for improving their quality.

The study suggests, among other things, that most of the population of Ghana still live in rural areas, and are small scale farmers; human labour is not being put to its most productive uses; the population is mobile; both the overall rate of population increase and the birth rates are high; that the population would probably double in a generation or less; and that as a result more of migrations rather than of local differences in birth rates, the rate of growth from place to place varied greatly.

The major problem facing the planners of Ghana must be how to provide a higher standard of living for the population, rapidly expanding owing primarily to high birth rates; and at the same time make full use of its human potentialities.

It is the view of the present writer that high birth rates are an inevitable response to, or concomitant of, prevailing poor human conditions in Ghana which include small scale peasant farming, and similar occupations; uncongenial physical and social environments, insecurity and low standards of living. As long as the majority of the population live in such conditions so long will the birth rate remain high.

The keys to the solution of Ghana's population problems are industrialization and literacy.

CHAPTER I

Introduction

Major Influences in the Pattern of Population Distribution in Ghana.

In Ghana population much reflects the pattern of economic development. The latter owes much to factors in the physical environment which include climate, vegetation, soils, and the type and structure of the underlying rocks. Changes in the physical environment effect changes in the pattern of population distribution, as for example, the possibilities of using the forest lands for the cultivation of export crops such as cocoa, coffee, rubber, and the extraction of timber. Before such exploitation, the forest lands of Ghana were relatively empty. Mining activities, the construction of railways and roads, the building of ports and the development of industrial centres have also greatly influenced the growth and distribution of the population.

Takoradi and Tema are almost entirely the creations of port activities; Tarkwa, Obuasi and Konongo owe their present-day importance as towns to gold mining activities; Mim to timber extraction, and Akosombo entirely to the dam at that site. Historical factors are sometimes important, for example, the resettlement of the Juabens from Ashanti in their present area in new Juaben (Koforidua) in the Eastern Region. Consequently, the population map of Ghana must be looked upon as an episode in a long drama.

Main Outlines of the Population of Ghana.

A number of things may be noted about the population of Ghana. An examination of the available data shows that although it is relatively sparsely populated, Ghana is more densely peopled than most countries of tropical Africa. Furthermore, the population is growing very fast. Birth rates are high and more than 50 per cent of the population is

under 20 years of age. This is a young population in a developing country: a situation paralleled in much of modern Africa.

Within the country, population densities vary widely between the north and the south, between urban and rural districts, among rural districts, and among the urban areas themselves.

The coastal and forest zones of the south have much higher population densities than the savannah grasslands and woodlands of the north where large expanses of empty lands occur. The former areas are increasing their population faster than, and are gaining at the expense of, the latter. Most of the people depend on agriculture for a living, and live in small towns of and villages with populations of less than 5,000 each. In 1960, there were 97 places having 5,000 people, or more (cf. Map 10.5.1). These accounted for approximately 23 per cent of the population. Moreover, the population in the urban areas is growing faster than that of the rural areas, and gaining at the expense of them.

Furthermore, most of the towns, and all the urban places with more than 50,000 persons each, or more, occur in the south.

Annually, Ghana receives a large number of immigrants especially from the neighbouring countries of West Africa. Within Ghana these immigrants vary widely in their distribution according to their places of origin, and the occupations they follow. For example, most of the Lebanese are traders and are to be found mostly in the large towns.

Among the native population of Ghana, considerable movements occur (Engmann, 1965), largely in response to changes in the pattern of development. In general, the net population movement is from the savannah and guinea woodlands of the north, to the forest lands and coastal areas of the south; and from the rural areas to the urban areas. In Ghana there is a very close and positive correlation

between the distribution of urban population and the rate of population growth.

Major reasons why the population of the forest and coastal areas is growing faster than that of the north is partly because the former areas account for the entire production of cocoa, coffee, banana, kola, and the extraction of timber; all the large-scale mining centres, all the ports, most of the new Constructional works (e.g. Akosombo dam), and the new and modern industrial centres (Tema-Akosombo industrial complex), and the three universities of Ghana. In short, most of the economic and social developments in the country have taken place in the south (Maps 1.3; 1.5).

Consequently, the distribution of the population in Ghana may be looked upon as a summing up, not only of the country as a whole, but also of its various subdivisions at the present stage of their development.

Summary of Present Knowledge of the Population of Ghana.

As Chapters 3 and 5 will show, censuses of increasing coverage and reliability have taken place within parts of the area of present-day Ghana from 1891 onwards (cf. Map 4.1; Appendix I). The pre-war counts up to that of 1931 were ably and authoritatively summarized by Kuczynski (1948). Unfortunately, his work cuts short at a very significant point - the first post-war census of British Africa, which added greatly to our previous knowledge. The quality of these counts is considered in detail in Chapters 2, 4 and 5. A detailed geographical study of the 1948 census returns, including comparisons with those of 1921 and 1931, has been made by Hilton (1960), and published in his Ghana Population Atlas. Certain comments upon features of this work will be found in Chapters 4 and 5. No such comprehensive study of the

returns of the 1960 population census has been made, though Hilton (1966, 1968), has studied the population of the Northern and Upper Regions of Ghana. The present writer (Engmann, 1965) has made a preliminary study of the distribution of the 1960 population.

But the population of a country is much more than a matter of a certain number of people in a given place. Physical presence, in static terms as such, is only a beginning. Population characteristics in broad terms have been mapped, with but little comment, in the 1960 Population Census of Ghana: An Atlas of Population Characteristics, in the production of which the present writer took a part as a geographer for a year. But this Atlas did not include the study of fertility rates, migration, male ratios, etc., and again tended to give a static picture. The 1960 population in relation to development, and, in the towns has been analysed by Grove (1963) and Grove and Huszar (1965), but, because of their aims, the rural areas, where over 75 per cent of the population still live, do not feature prominently in their analysis.

As Chapter 8 will show, the dynamics of the population have been studied by a number of investigators, e.g. Gaisie (1964), Addo (1964) and Caldwell (1965; 1966; 1967a; 1967b; 1968a; 1968b). These works were concerned principally with fertility patterns, were necessarily narrow in scope and, did not give sufficient attention to geographical perspectives; frequently, the fertility patterns were examined in relation to only one or two variables.

Hunter (1966a; 1966b) studied the carrying capacity of agricultural lands in relation to migration in the south; and the relationship between onchocersiasis and migration in parts of the Upper Region of Ghana. He did not study fertility patterns or the role of the type of labour in migration patterns.

Although Forde (1968) studied a large number of variables, again, she did not study fertility and gave very little attention to Migration. Further comments on certain features of this work will be found in Chapter 11. Against this background of previous work the main argument of the present work will now be outlined.

Population Characteristics: The Key to a Deeper Understanding of the Population Geography of Ghana.

Each population has characteristics peculiar to itself. These characteristics vary through time. Changes in the numerical distribution of the population will bring about changes in its demographic characteristics, e.g., male - female ratios, fertility rates, age and occupational structure, and participation rates in labour. Conversely, changes in the characteristics of the population may result in changes in its numerical distributional patterns, as for example, when the birth rate falls, the death rate rises, or the incidence of a particular disease increases.

Factors in the environment and the pattern of economic development will effect changes in the character of the population in question. Conversely, the character of the population may initiate changes in the physical environment and influence - even determine - the pattern of economic and social development.

Consequently, the character (i.e. the sum total of all its demographic characteristics) of the population should be considered as a summing up of all the geographical factors which impinge on it. An analysis of the characteristics of the population considered in dynamic terms is therefore a key to a deeper appreciation of the population geography of a country.

Yet this aspect of population geography does not appear to have

Table 1.1

Table of Geological Succession in Ghana

QUATERNARY	Recent	Unconsolidated clays and sands of lagoons, delta and littoral areas.
TERTIARY	Upper Tertiary ----- Eocene	Partly consolidated red continental deposits of sandy clays and gravel.
MEZOZOIC	Upper Cretaceous -----	Marine sediments, sandstone, glauconitic sandstones, clay and shale, limestone, oil, sand.
	Upper Jurasic	"Amisian". Fresh water series of bouldery and sandy clays and conglomerates.
PALAEOZOIC	-----	
	Devonian	'Sekondian'. Marine series of sandstones, shales, black sulphurous shales.
		'Accraian'. Middle Devonian only, sandstones and shales.
	Silurian Ordovisian Cambrian	'Voltaian'. Sandstone, shale, mudstone, conglomerate, limestone tillite.

PRECAMBRIAN	Upper	'Buem formation'. Folded and metamorphosed sediments. Not granitized or intruded by granites. Togo Tarkwaian
	-----	
	Middle	'Birrimian'. Geosynclinal sediments and volcanics, partly granitized and greatly intruded by granites.

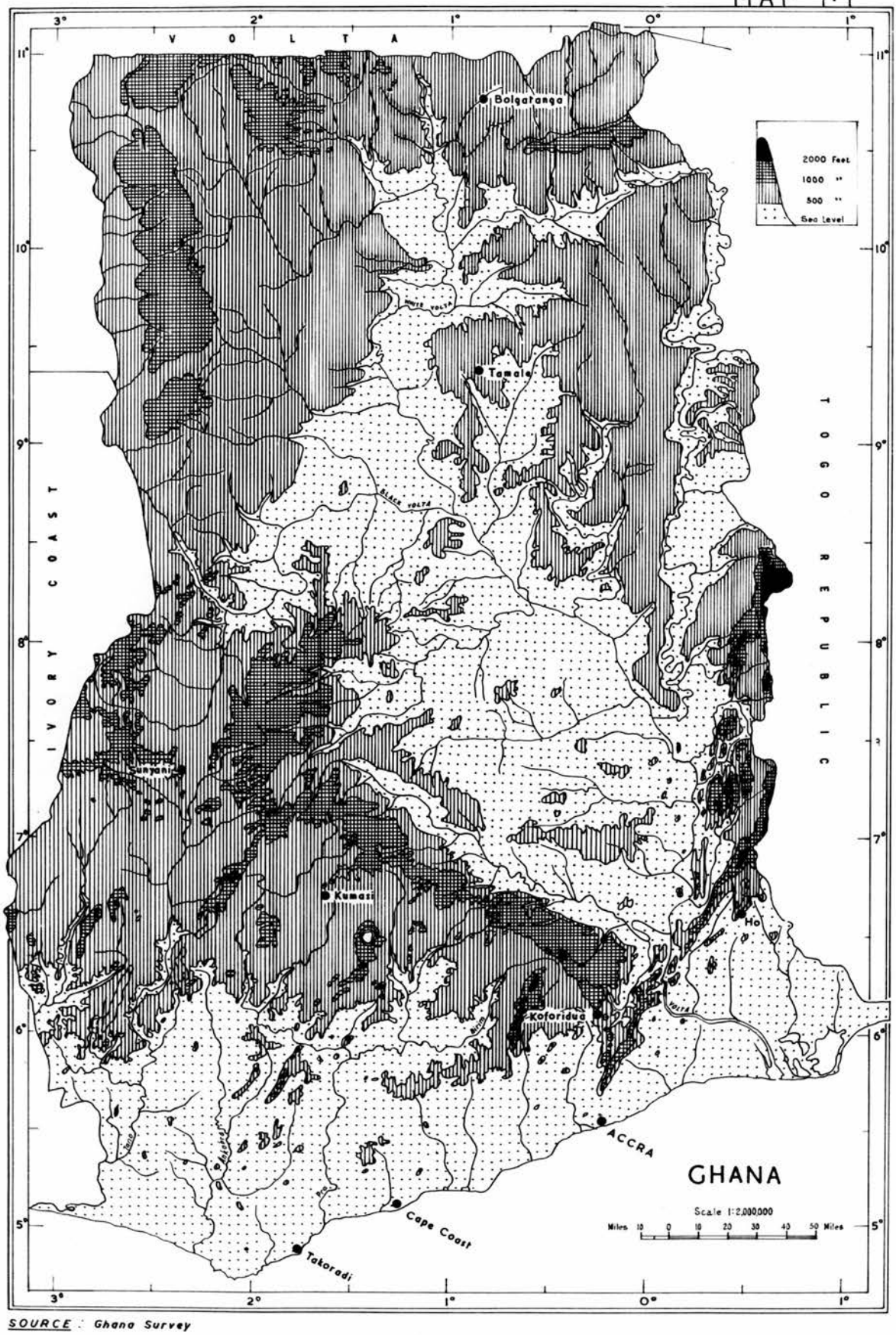
	Lower	'Dohomeyan'. Massive crystalline gneisses and migmatites representing thick series of argillaceous, calcareous and arenaceous sediments, but with few sohist remnants.

Note: ----- = unconformity

B.A. Bates, in Wills, editor (1962), Agriculture and Land Use in Ghana.

PHYSICAL

MAP 1.1



SOURCE : Ghana Survey

been given sufficient attention. In later chapters, the characteristics of the population of Ghana will be examined and their geographical distribution will be analysed for significant trends. Data from census reports and official sources (e.g. medical reports) and from field surveys carried out by the present author will be used.

The Physical Environment as a Factor in the Population Geography of Ghana.

In order to facilitate the analysis of the relationships between the physical environment and population trends in Ghana, the following physical regions may be noted, viz:-

1. The Voltaian Basin.
2. The Akwapim- Togo Ranges
3. The Intermediate Plateau or Akan Dissected Plateau.
4. The Wa-Navrongo Plateau to the North and West of the Voltaian Basin, and
5. The Accra-Ho-Keta Plains.

These divisions are arbitrary, and take account of the major factors of the physical environment.

Most of Ghana is under 1,500 feet in height, and only small parts are 2,000 feet or more in altitude, e.g., the Akwapim-Togo Ranges which run from near Accra in a north north-easterly direction to the Ghana-Togo border and beyond; and the Mampong-Koforidua (or Mampong-Kwahu) Plateau, trending north-west to south-east, north of the towns of Koforidua and Kumasi (Map 1.1). From Half-Assini in the west to Keta in the east, the coast is generally below 100 feet in height and fringed by numerous lagoons. The Voltaian Basin lies between the Akwapim-Togo Ranges and the Koforidua-Mampong high plateau and extends northwards to include a huge area nowhere above 500 feet in altitude and drained by the Voltaian system. The Intermediate Plateau or Akan Dissected

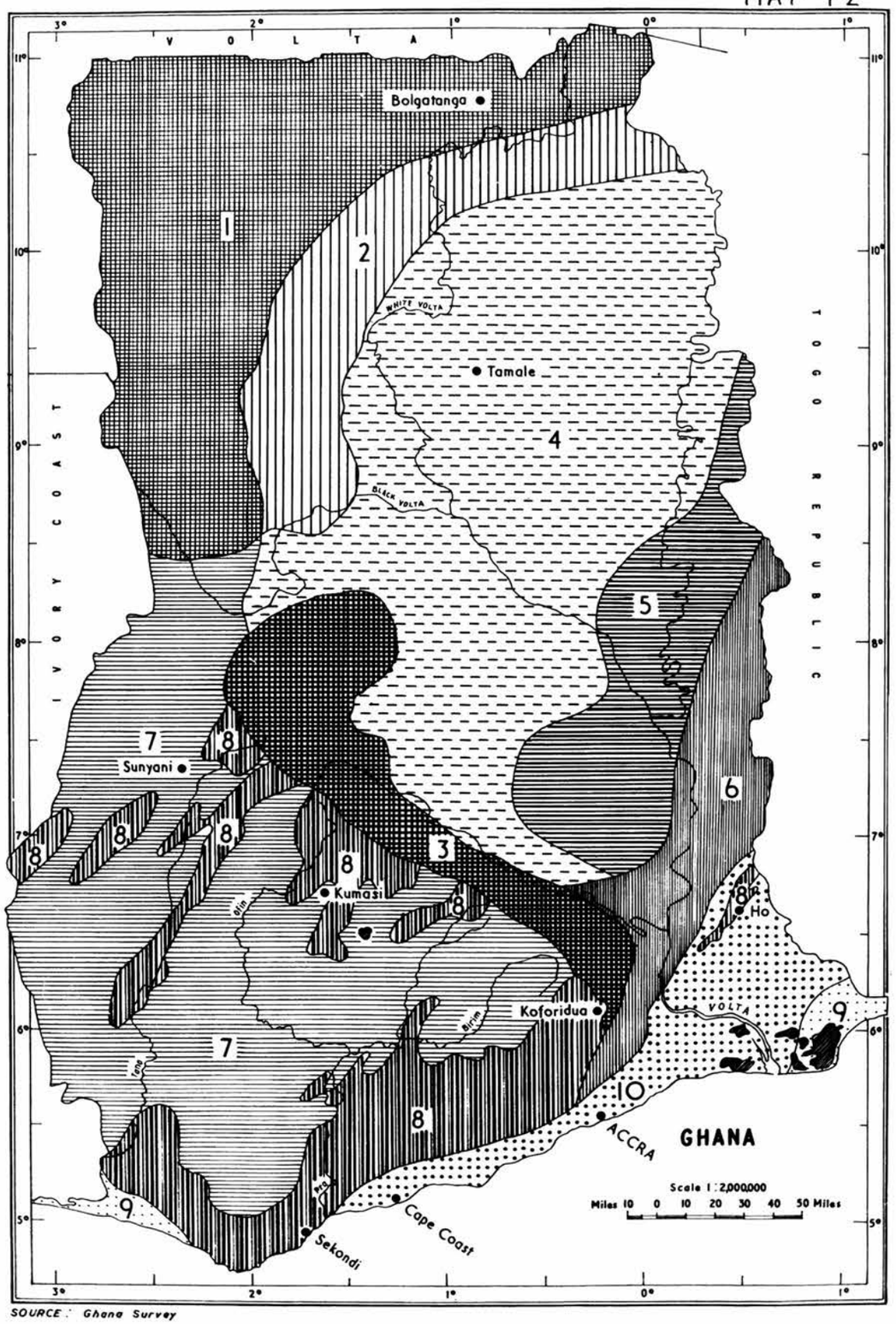
Table 1.2

Provisional Classification of Soils in Ghana

Order	Suborder	(Soil Group Family)	Great Soil Group	Great Soil subgroup
CLIMATO-PHYTIC EARTHS	HYGROPEDS	Latosol	Forest Ochrosol	Red Forest Ochrosol
			Savanna Ochrosol	Yellow Forest Ochrosol
				Red Savanna Ochrosol
			Forest Oxysol	Yellow Forest Oxysol
			Forest Rubrisol	Red Forest Rubrisol
		?Basisol	Savanna Rubrisol	Red Savanna Rubrisol
			Forest Brunosol	
			Savanna Brunosol	Yellow Savanna Rubrisol
	XEROPEDS		Reddish Prairie?	
TOPOHYDRIC EARTHS	PLANOPEDS	Very acid planosol?	Groundwater Podsol	
		Acid planosol	Groundwater laterite	
		Calcium Planosol	Tropical Black Earths	
			Tropical Brown Earths	
		Sodium Planosol?	(Tropical Grey Earth)	
		Very Acid Gleisol	Savanna Grey very acid Gleisol)	
			Savanna Black Acid Gleisol)	
		Acid Gleisol	Savanna Brown Acid Gleisol)	
			Forest Grey Acid Gleisol)	
			Savanna Grey Acid Gleisol)	
	DEPRESSION PEDS	Neutral Gleisol	Forest Black Neutral Gleisol)	
			Savanna Brown Neutral Gleisol)	
			Forest Grey Neutral Gleisol	
			Savanna Grey Neutral Gleisol)	
		Calcium Vleisol	Black Vleisol	
			Brown Vleisol)	
			Grey Vleisol	
		Sodium Vleisol	Solenetz?	
			Solonchak	
	CUMULOPEDS	Cumulosol	Very Acid Bog?	
			Acid Bog?	
			Saline Bog	
	HYDROPEDS	Hydrosol	Neutral Hydrosol?	
			Saline Hydrosol	
LITHO-CHRONIC EARTHS	LITHOPEDS	Basimorphic Lithosol	Black Basimorphic Lithosol)	Yellow Basimorphic Lithosol
			Brown Basimorphic Lithosol	
			Red Basimorphic Lithosol	
		Non-Basimorphic Lithosol	Non-Basimorphic Lithosol)	
	REGOPEDS	Regosol	Dune-sand Regosol with calcareous pan)	
			Dune-sand Regosol without calcareous pan)	
			Other Regosols	
	ALLUVIOPEDS	Alluviosol	Black Alluviosol)	
			Brown Alluviosol)	
			Grey Alluviosol)	

HYDRO – GEOLOGICAL MAP

MAP 1·2



SOURCE: Ghana Survey

LEGEND

1 — North and northwest region of granite and subsidiary Birrimian metamorphics, Poor dry–season surface supplies. Shallow ground water scanty. Suitable for boreholes of yield 200 to 1,000 gallons per hour and for superficial storage both at carefully selected localities.

2 — Voltaian quartzites and shales, flat–lying. Poor to fair dry season surface supplies. Shallow ground–water scanty; not generally suitable for boreholes. Superficial storage at selected localities recommended

3 — Voltaian quartzites, flat–lying. Fair to good dry–season surface supplies and shallow ground–water. Boreholes not generally suitable. Superficial storage (e.g. collectin boxes), and wells recommended

4 — Voltaian shale and mudstone, flat–lying. Very poor dry season surface supplies; shallow and deep ground–water scanty. Not suitable for wells or borehole. Superficial storage recommended.

5 — Voltaian arkoses and shales, latter folded in east of area. Poor dry season supplies away from Volta, Oti and Obosum rivers. Shallow ground–water scanty but borehole prospects fair to good.

6 — Togo and Buem quartzites. phyllites and mudstones; highly folded and well jointed. Surface supplies fair to good. Borehole prospects good.

7 — Birrimian schists, phyllites, greenstones and greywackes; highly folded. Surface supplies and shallow ground–water fair to good. Borehole prospects fair to good especially where quartz veining abundant.

8 — Granite and granitic gneisses. Surface supplies fair to good. Shallow ground–water fair to good. Not generally suitable for boreholes. Wells and superficial storage recommended.

9 — Southeastern and Southwestern Cretaceous and Tertiary sediments. Surface supplies and shallow ground water poor to fair. Borehole prospects very good well–defined aquifers.

10 — Dahomeyan acid and basic gneisses, sediments of the Volta delta, and coastal savannah zone. Very poor dry season surface supplies. Shallow and deep ground–water scanty and where present unpalatable. Boreholes not suitable. Superficial storage recommended.

Freshwater lakes and lagoons

Plateau lies to the west of the Mampong-Koforidua Plateau and extends almost to the coast. It is closely drained and dissected by the Densu, Ayensu, Pra, Tano and Ankobra. Consequently, the Mampong-Koforidua Plateau may be considered as the main drainage divide in Ghana, separating the Voltaian system to the north, from the others to the south. North of about 8°30'N all the land above 500 feet in height can be regarded roughly as comprising the Wa-Navrongo Plateau which is differentiated from the Intermediate or Akan Dissected Plateau more by climate, vegetation, soils and human response, and by the fact that it is drained by the Voltaian system, than by geology and relief. Along the coast in the extreme south-east of Ghana are the Accra-Ho-Keta Plains which form a triangle of low ground with its apeces near Accra in the west, Ho in the north, and Keta in the east. (Maps 1.1; 1.2 and Table 1.1).

Climate, Vegetation and Soils of Ghana (Map 1.4 and Table 1.2).

Because the mean monthly temperatures are high throughout the year, it is the distribution of rainfall (its total amount, incidence, regime etc.) that is the chief factor in climate, vegetation, soils and land-use (cf. Wills, 1962, pp. 201 - 225). The mean annual rainfall decreases from the South-west (80 inches or more) to the North-east (45 or less). It also decreases along the coast from west to east, reaching a minimum (30 inches or less) in a zone lying east of Accra (cf. The Shai-Ningo Plains). In the coastal and forest areas the rainfall comes in two peaks, i.e., May-June and September-October. Northwards from about latitude 8°N, the rainfall tends progressively towards a one peak regime (Wills, 1962, p. 206. Cf. Navrongo).

The length of the dry season - a matter of great significance - increases from south to north. For example, the number of dry months is 1 in Axim, 2 at Bekwai, 3 at Ejura, 5 at Wa and 6 at Zuarungu.

Table 1.3

Dry Season Rainfall as percentage of annual total in Ghana

Locality	Proportion (in per cent.)
Axim	32.0
Half Assini	32.5
Dunkwa	35.0
Bekwai	35.0
Ejura	30.0
Wa	14.0
Zuarungu	8.0
Navrongo	7.0

Source: Computed from H.O. Walker, in Wills (editor), Agriculture and Land Use in Ghana, 1962, p.48, Table 26.

Table 1.4

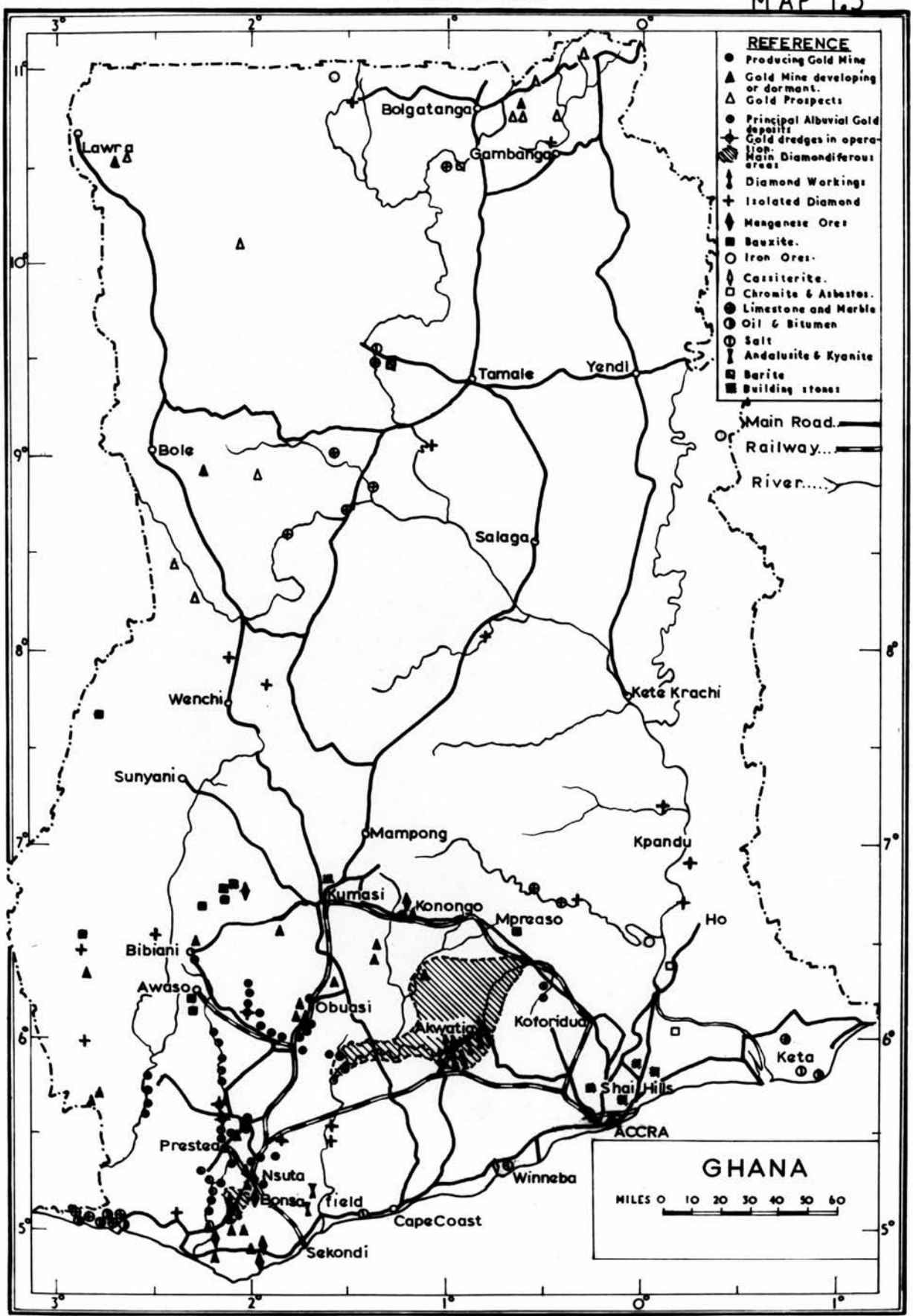
Soil types, number of raindays and amount of rainfall during the dry season (December to February) in the Oxysol-Ochrosol zone, Ghana

Soil zone	Total rainfall in inches	Raindays
Oxysol	7.98 - 8.69	13 - 21
Transition	4.24 - 7.51	11 - 15
Ochrosol	2.52 - 6.9	5 - 14

Source: H.O. Walker, in Wills (editor), Agriculture and Land Use in Ghana, 1962, p.48, Table 26.

MINERALS

MAP 1.3



SOURCE: Survey of Ghana

Table 1.3 shows that during the dry season, the proportion of the annual rainfall received declines from south to north. In general, the variability of rainfall is high in areas of low rainfall and high in areas of high rainfall (65 inches or more).

Types of Vegetation and Soils.

Unless otherwise stated, vegetation in this context will imply climatic climax plant association. Three broad types of vegetation zones may be noted.

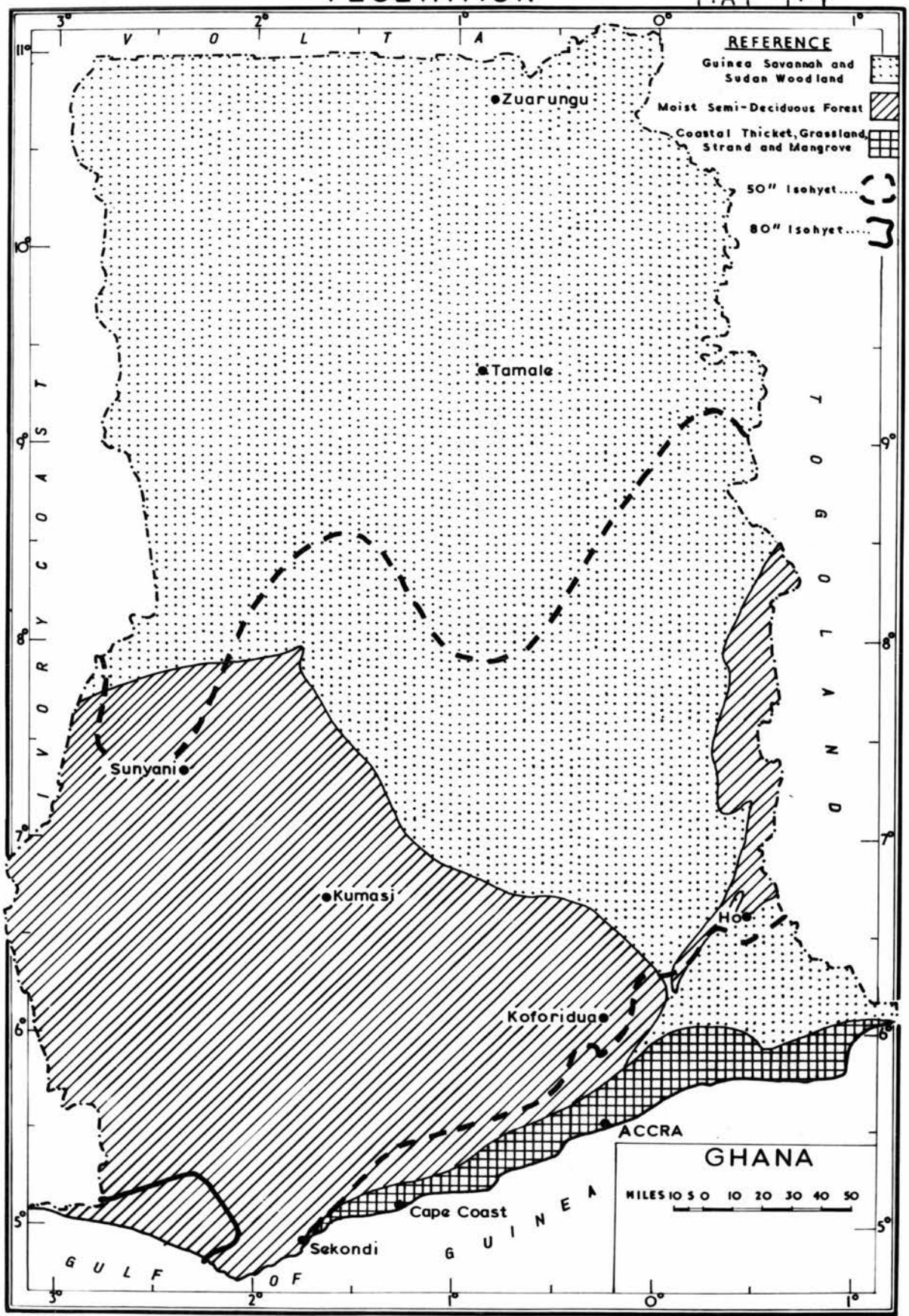
1. The Guinea Savannah and Sudan Woodland (about 57,850 sq. miles).
2. The moist semi-deciduous Forest (about 31,760 sq. miles).
3. The Coastal thickets, grassland, strand and mangrove (about 2,233 sq. miles in area). Map 1.4.

1. The Guinea Savannah and Sudan Woodland.

This type of vegetation and associated soils occur in Ghana where the mean annual rainfall from a one peak regime is between 40 and 50 inches or less. It occupies the whole of the Voltaian Basin, where it extends to areas with higher rainfall, probably through soil influences and human interference, and the Wa-Navrongo Plateau. It accounts for approximately 63 per cent of the total land surface of Ghana. The soils include Savannah Ochrosols, Savannah Ochrosols with Lithosols and Brunosols, Ground-water Laterites and Ochrosol Intergrades, Tropical Black Earths, and Acid Gleisols (Table 1.2). These soils are presently considered to be very poor and their use will depend upon the application of machinery, manures and fertilizers (Brammer, 1962). Drought continues to be the major problem of land-use in this zone.

The major features of the zone in question appear to be sparseness of population and depopulation and in spite of its vast size, this zone accounted for less than 25 per cent of the population returned in 1948

VEGETATION MAP 1.4



SOURCE : Survey of Ghana, 1964

and 1960. It also reported population loss to all parts of the country.

The major reasons for this demographic situation would appear to be poor soils, the small amounts of annual rainfall, its variability and unreliability, (Wills, 1962, p. 14), the high rate of evapo-transpiration, the long periods of drought when most of the area in question is dominated by stable Harmattan conditions. Soil exhaustion and erosion, the disease factor, the low level of economic development and the lack of opportunities for employment also explain part of the problem.

2. The Moist Semi-Deciduous Forest and Associated Soils (Tables 1.4 and 1.5)

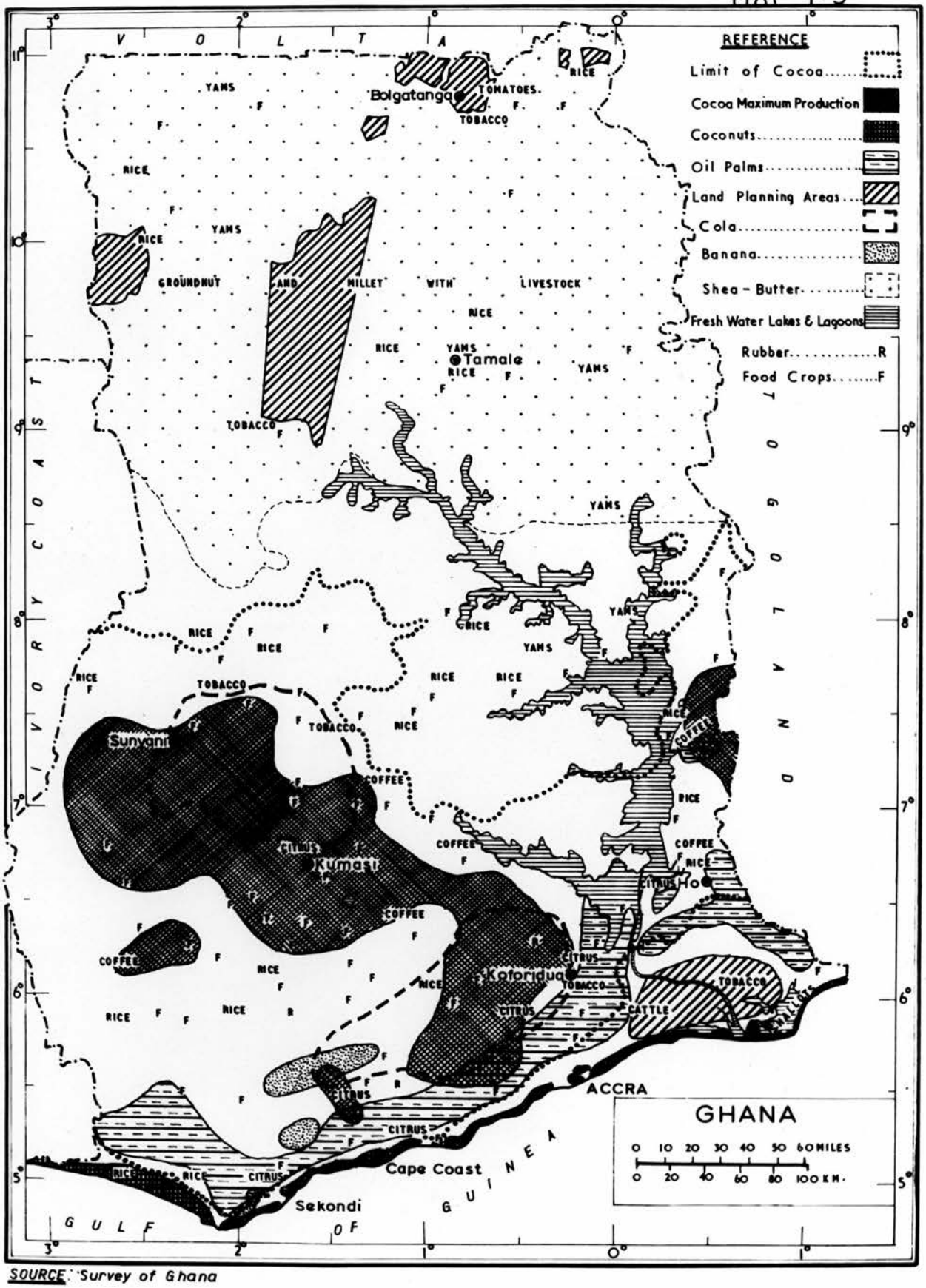
The above-named forest with its associated soils occurs in areas with a mean annual rainfall from a bi-modal regime between 45 and 80 inches, or more. Presently, it covers an area of approximately 31,760 square miles, or about a third of the land surface of Ghana. The term is not quite accurate, for parts of the zone are true Tropical Rainforest, and so the term High Forest or Forest will be adopted instead.

With the exception of a narrow coastal belt extending from 10 to 20 miles between Takoradi and Ada, the High Forest Zone occupies the south-western part of Ghana (i.e. the Akan Dissected Plateau), the southern and western parts of the Mampong-Koforidua High Plateau, and west of the Akwapim Ranges. Across the Volta, the Togo section of the Akwapim-Togo ranges carries an outlier of the High Forest. It may be found also in suitably protected valley locations wherever soil conditions, slope, aspect and human occupance permit forest growth. Two subdivisions of the High Forest may be noted:-

(i) The Tropical Rainforest where the mean annual rainfall is 70 to 80 inches or more, with little or no dry season; it covers approximately 2,905 square miles in the south-western corner of Ghana where it touches the sea in the Axim district. The Rainforest may also occur elsewhere

AGRICULTURAL PRODUCTS

MAP 1.5



SOURCE: Survey of Ghana

under considerably lower rainfall conditions where especial lithological conditions allow.

(ii) The Moist Semi-Deciduous Forest accounts for approximately 90 per cent of the High Forest area in Ghana, and occurs where the rainfall from a bi-modal regime is between 45 and 65 inches. Its two subdivisions are the Celtis Triplochiton Association with mean annual rainfalls in excess of 55 inches; and the Antiaris-Chlorophora Association where the rainfall is considerably less and the dry season longer (2 to 3 months).

Soils of the Forest Zone

In Ghana, these are generally climatophytic earths (Wills, 1962, p. 90) and are developed over a wide variety of crystalline, metamorphic and sedimentary rocks. They include Tropical Forest Ochrosols and Oxysols which account for about 90 per cent of the forest soils of Ghana. Other soils include Lithosols, Regosols, Rubrisols, Brunosols and Gleisols.

The Forest Ochrosols, the most important soil group of this zone, occur under rainfalls of between 40 and 65 inches, and may be different shades of red and yellow. The Forest Oxysols occur under rainfalls of about 70 inches or more and elsewhere under suitable lithological conditions (Tables 1.4 and 1.5). They are more heavily leached than the forest ochrosols and therefore more acid and paler. They occupy about 2,905 square miles in the extreme south-west of Ghana, are also less productive and at the moment carry a relatively sparse rural population (Maps 7.1 and 7.2).

The Moist Semi-Deciduous Forest is perhaps the most important vegetation zone of Ghana. It accounts for the whole of the cocoa, coffee and timber production, as well as for most of the foodstuffs produced for internal consumption. (see Map 1.5).

Table 1.5

Rainfall amount, number of raindays, length of dry period, and climatic types in relation to soils of the Forest Zone of Ghana

Soil series and locality	No. of raindays (and dry months)	Total rainfall in inches	Climate based on Köppen
Ochrosols			
Bakwai	117 (2 dry months)	59.10	Aw
Bibiani	145 (2)	57.60	"
Goaso	104 (3)	55.30	"
Juaso	128 (2)	65.62	"
Koforidua	119 (1)	57.12	"
Kumasi	140 (2)	58.21	"
Nkawkaw	126 (2)	68.75	"
Sunyani	95 (3)	52.66	"
Wenchi	96 (3)	53.48	"
Wiawso	120 (2)	58.91	"
Transition soils (intergrades)			
Dunkwa	133 (2)	64.23	Aw
Manso	103 (1)	64.62	Am
Oda	139 (1)	62.56	Aw
Tafo	126 (1)	64.55	"
Takoradi	120 (3)	46.69	"
Oxysols			
Axim	133 (0)	88.82	Am
Bondaye	153 (1)	66.18	"
Esuaso	106 (1)	67.00	"
Half Assini	98 (1)	88.65	"
Tarkwa	166 (0)	70.07	"

Sources: Crosbie, A.J., The Soils of the Closed Forest Zone of Ghana. Thesis presented for the Degree of Doctor of Philosophy of the University of Edinburgh in the Faculty of Social Sciences, 1965 (unpublished), Table 3, p.
Trewartha, G.T., Introduction to Climate, McGraw-Hill, London, 1954, Appendix A, pp.381-2.
Walker, H.O., in Wills (editor), 1962, p.48, Table 26.

This zone is notable for its high rate of population growth reported between 1948 and 1960 (Map 6.1); the very high fertility rates (Map 8.1), the higher than average population movements (Map 10.2.2). and above all the large number of towns with 5,000 persons or more each. In Ghana there is a close correlation between the distribution of persons producing coooa and the population growth between 1948 and 1960 (rho. = 0.368) and school attendants.

3. The Vegetation of the Coastal Thicket, Grassland, Strand and Mangrove and Associated Soils.

Two main subdivisions of this zone may be noted, viz:-

(i) The strand and mangrove zone which lies next to the sea and lagoons along the edge of the coastal plains. Here the vegetation is the result more of edaphic factors than of climate, and most of the plants grow in brackish or salt water, e.g. mangrove.

(ii) The coastal grasslands and thickets cover the plains from Takoradi to Keta. Where rainfall is between 35 and 45 inches or more, thickets occur (Cape Coast); where the rainfall is between 25 and 35 inches or less, grasses predominate. (e.g. Accra Plains). Throughout the zone, the annual rainfall is bi-modal.

The main features of the major regions of Ghana noted earlier, may now be summarized.

1. The Voltaian Basin

The Voltaian Basin constitutes the largest single physical region in Ghana and accounts for about 45 per cent of the land area. Geologically it is composed chiefly of uniform, gently-dipping sandstones, shales, conglomerates and limestones of the Voltaian system. It is rimmed by outward-facing scarps on the north, west and south; but on the east the scarps face inwards, where they are composed mainly of

Buem formations. From Koforidua to Wenchi the western scarps are prominent, and may exceed 2,700 feet in places. The northern and southern scarps are nonetheless striking features, e.g., the Gambaga Scarps. Within the basin itself the topography is uniform, the gentle slopes steepening only towards the rim where bands of resistant rocks outcrop or peneplain residuals occur. (Table 1.1; Maps 1.1 and 1.2).

The mean annual rainfall varies from 40 to 50 inches and comes in one peak season from April - May to September - October. The predominant vegetation is Guinea Grassland and Savannah Woodland (Map 1.4).

The soils are mainly those of the interior savannah type and include Savannah Ochrosols, Brunosols, Laterites and Laterite Ochrosol Intergrades, and Tropical Black Earths (Table 1.2). Humus contents are low, and the soils are poorly provided with nutrients, e.g., phosphorus and nitrogen. In general the soils are of the poorest quality and at the moment they support only dry-zone crops such as yams, guinea corn, ground nuts, millets and pulses.

The main features of the Voltaian Basin are sparseness and loss of population. But some of it is now covered by the Volta Lake, and the improved communications, new economic opportunities and the resettlement scheme under way may be expected to materially affect the population geography of this area.

2. The Akwapim-Togo Ranges.

Geologically, these fold ranges are older than the Voltaian formations and are composed of more resistant Togo series (Map 1.2). The hard rocks form the hills and the phyllites form the floors of the intervening valleys.

Climatically, most of the region belongs to the forest zone with a mean annual rainfall ranging from 50 to 60 inches. The soils include chiefly Forest Ochrosols and Intergrades with various shades of red and

yellow.

In suitable locations cocoa, coffee and oil-palm are cultivated. The Akwapim section was the cradle of the cocoa industry in Ghana, but because of the devastation caused by the swollen shoot disease of cocoa, it now supports stagnant or declining population. By contrast, the Togo section in north-eastern Volta Region is the scene of new activities in cocoa production. Most of the cocoa here was planted between 1931 and 1945. The main feature here is the relatively high rate of population growth between 1948 and 1960. This is certainly the fastest growing area, population-wise, in the whole of the Volta Region.

3. The Intermediate or Akan Dissected Plateau.

This plateau has an average height of 1,500 feet above sea level and is underlain by rocks of middle Pre-Cambrian formations, of which the best known are the Birrimian and Tarkwaian series (Table, 1.1; Map 1.2) which are the sources of most of the useful and precious minerals worked in Ghana, e.g., gold, diamonds, manganese and bauxite. Most of the gold mined in Ghana comes from the Birrimian series. The distribution of minerals is shown on Map 1.3. At present, the Birrimian rocks are worked for gold at Prestea, Obuasi, Bibiani and Konongo. The Tarkwaian series are presently worked at Tarkwa-Abosso. Placer deposits and alluvial gold are dredged in stream beds which drain the Birrimian and Tarkwaian rocks (e.g. at Hemang). Ghana's gold production since 1953 has averaged approximately 21,500 kilogrammes. (U.N. Statistical Yearbook, 1967b).

Diamonds are worked at Abomosu on the Birim River, north-west of Kibi, at Oda and on the Bonsa River to the south-west of Tarkwa. Presently, about 90 per cent of the stones are obtained from the area around Oda and Kade, especially in the vicinity of Akwatia. Here the

richest gravels are to be found on the Esuboni river (Map 1.3).

The largest body of mangenese is worked at Nsuta, 5 miles south of Tarkwa (Map 1.3). Its proximity to the railway helped production. Small deposits also occur near Tarkwa, Takoradi and at Himakrom near Dixcove. Ghana's production and declining export of 277,000 metric tons in 1966 made her the worlds seventh largest producer (UN. 1967, op. cit), although she is the second largest producer in the British Commonwealth after India. Since the end of the second world war, Ghana's share of the world's manganese production has declined from about a third of the world's total to approximately 3.6 per cent. This is due partly to new finds in other parts of the world, and partly to lack of ready world market to absorb the Ghanaian ore.

Deposits of Bauxite were opened up during the war at Mount Ejuanema and Mount Kanaiyebo; the former has since been closed, but about 370,000 metric tons were produced in 1966 (U.N. 1967b, op.cit). The annual production has increased since 1950. The main deposits estimated at some 200 million tons remain untouched. They are situated on the hills around Yenahin, 40 miles west of Kumasi in the same range as the much smaller deposits at Awoso now being worked and exported through Takoradi (Map 1.3).

It is probably true to say that this is the most important region for the production of minerals in Ghana. It is notable that mineral production has been a considerable incentive to the development of communications.

The bi-modal rainfall averages from 60 to 80 inches a year or more. The chief soils include Forest Ochrosols and Oxysols with various shades of red and yellow. The Basisols which develop in the Birrimian Greenstones tend to be notably productive. Other soils

include Rubrisols, Brunosols and Gleisols. The predominant vegetation is the Semi-Deciduous Forest. This has already been discussed.

Most of the cocoa, rubber, coffee, kola and timber are derived from this region. This region is therefore, also agriculturally the most important in Ghana (Map 1.5). Note the positions of Koforidua, Kumasi and Sunyani in relation to the zone of maximum cocoa production.

Demographically, the main features of this region include the rapid rate of population growth between 1948 and 1960; the large number of towns with 5,000 persons each or more (Map 10.2) and the high fertility rates (Map 8.1). Furthermore the region accounts for almost the entire railway system, most of the best roads and most of the economic and social developments in Ghana (Map 1.3 and 1.5)

4. The Wa-Navrongo Plateau

Geologically, the Wa-Navrongo Plateau with an average height of 1,500 feet is underlain by Pre-Cambrian formations, e.g., the Birrimian and Tarkwaian series. Useful and precious minerals have been located in places but presently none is worked on a large scale partly because of limited knowledge but more through poor communications. Geologically therefore, this plateau is similar to the Intermediate Plateau discussed above.

The mean annual single maximum rainfall ranges from about 50 inches in the south to 40 inches in the north. It comes between April-May and September-October. The relative variability of rainfall is high and in most places exceeds 20 per cent (Wills, 1962, p. 90). The dry season lasts for 4 to 6 months during which the area is dominated by stable harmattam conditions (ibid., p. 206). Predominant soils include the tropical red and yellow earths, indurated regions of which tend to form into laterites on exposure. Gleisols are found on the

old river beds. Patches of Tropical Black Earths occur in places. On the whole, the soils of this region are unproductive except perhaps those of the compound farming areas of the extreme north-west and north-east where they are heavily farmed and carry dense rural populations. (Wills, 1962, p. 204; also p. 206, Figs. 9 and 10). Otherwise, most of the area is devoted to livestock and is thinly peopled, though often overstocked and eroded. The predominant vegetation of the Wa-Navrongo Plateau is the Guinea Savannah and Sudon Woodland, but along some of the large streams narrow ribbons of forest may occur. Foodcrop production and livestock raising, mostly at the subsistence level, are the predominant occupations (Map 1.5; also Wills, 1962, p. 202).

Demographically, the notable features of the region in question are sparse population and population loss mainly through net emigration. It would seem that the reasons include the poor soils, inadequate and unreliable rainfall, soil erosion, the disease factor (e.g. onchocerciasis, and cerebro-spinal meningitis), the limited opportunities for employment, and the low level of economic and social development. As will be shown in Chapter 10, there is a very close correlation between the movements of labour and of population.

5. The Accra-Ho-Keta Plains.

Geologically, this area is underlain by basic Dahomeyan formations; but along the beds of the major streams and lagoons, tertiary and recent formations occur. The average height of the region is from 50 to 150 feet but occasional residual hills occur in places (e.g. the Shai Hills).

The rainfall from a double maxima regime averages between 25 and 45 inches per annum. Predominant soils include Savannah Ochrosols, Regosolic Ground-water Laterites, Tropical Black Earths, Gleisols,

Sodium Soils, Vleisols, and Savannah Lithosols and Regosols (Table 1.2). Along the margins of the lagoons, the vegetation is of the hardy saline species; otherwise the predominant vegetation is grass with isolated clumps of thickets frequently associated with ant hills. In some areas fan palms dominate the vegetation.

Because of the erratic and inadequate rainfall much of this region is very sparsely population. For example, the Tropical Black Earths, although potentially productive and estimated to cover some 500 square miles of the region in question, are presently mostly used for grazing. By contrast, the infertile Regosols near Keta are intensively cultivated for shallots and maize etc. by the application of water, fertilizers, and manures in the form of cow and bat dung and fish. Consequently, they are very densely peopled. It is hoped that the irrigation scheme now under way on the Accra Plains will materially affect the land-use pattern and population distribution of the area in general.

Yet, for historical reasons, especially with the advent of traders and the colonial powers, this region has become part of the ocean approach of Ghana (Redmayne, 1938), and includes its capital city, Accra. Although rural populations are very sparse, the Accra-Ho-Keta Plains constitute the most urbanized region in Ghana with approximately 80 per cent of the overall population residing in towns with 5,000 persons or more (10.5.1). Here is the core of the Tema-Akosombo Industrial Complex based on the port activities and manufacturing industries at Tema, and electric power from the Volta Dam. Between Tema and Akosombo occur the heavy, but potentially valuable, Tropical Black Earths of the coastal zone to be irrigated with water derived from the Volta Reservoir and worked with the help of machinery and fertilizers.

Population-wise, this appears to be the fastest growing region in Ghana. The present indications are that it will continue to grow.

Summary

In this chapter the main features of the Ghanaian population were outlined, and the varying opportunities presented by the physical environment for development and population were examined. Consequently, in Ghana as in many other developing countries of Africa it is possible to identify "islands" of intensive economic development, or what Hance (1964, p.46) has termed Productive Islands, separated from one another by 'seas' of relative stagnation. In Ghana because of the close association between development and population growth, the population in these "islands" of active economic development has grown faster than that of the economically depressed areas (Engmann, 1965). The identification of these areas of relative growth and stagnation are of profound significance for population dynamics (cf. Table 1.6). Alternatively, it is possible to distinguish between these two types of areas in question by an analysis of the movement of the population. It is probably true to say that the first indications that an area is developing or stagnating are shown respectively by net immigration or net emigration. Both trends are of great significance for the structure of the population of the area in question. In Ghana differential population movements reflect very closely the varying degrees of economic development in different parts of the country.

The following areas will be classed provisionally in approximately decreasing order of present-day importance as "islands of development" (cf. Map 1.5). Viz.:-

'Islands' of development in Ghana

1. The Accra-Tema-Akosombo 'Island of development. Developments in this 'island' are based on the presence of Accra as the primary administrative and financial capital of Ghana; port activities, the most modern industrial establishments and publishing houses in Tema; and electric power for industrial use, and water for domestic, agricultural and industrial uses from the Volta Dam at Akosombo.

2. The South-western 'Island of Development'. The chief elements of development in this 'island' are the port and industrial activities of Takoradi-Sekondi; mining activities in Tarkwa, Nsuta, Prestea, etc., the production of rubber, bananas, palm and timber etc., and the extraction of timber.

3. The Kumasi Island of Development. This is based on the industrial, administrative and educational centre of Kumasi, mining activities at Obuasi and Konongo, the production and marketing of cocoa, coffee, rubber and the extraction of timber. Kumasi is also the hub of communications in Ghana (Map 1.5).

4. The Brong-Ahafo South 'Island of Development'

Primarily it is a rural "island". Its prosperity derives primarily from the cultivation of cocoa, coffee and the extraction of timber. It includes Sunyani, its administrative centre, and Min, noted for its timber industry.

5. The Buem 'Island of Development'. This is the Buem district of the north-eastern Volta Region (cf. the Togo Ranges). The 'island' derives its prosperity from the production of cocoa, coffee and some timber. The chief towns include Jasikan and Kajebi. Like (4) above, it is a new cocoa growing district (Engmann, 1965), and perhaps the least accessible.

6. The Tamale 'Island of Development'. Development here is based on educational and administrative activities centred in Tamale and Pong-Tamale to the north of the former. For historical reasons it is still the administrative centre for most of the Northern and Upper Regions of Ghana.

Table 1.6

Coefficient of Similarity among 'Islands of Development' in Ghana, 1960[1]

'Island of Development'	Accra-Tema-Akosombo 1	South-West 2	Kumasi 3	Brong-Ahafo South 4	Buem 5	Tamale 6
1. Accra-Tema-Akosombo						
2. South-West	0.702					
3. Kumasi	0.827	0.772				
4. Brong-Ahafo S.	-0.256	-0.231	-0.321			
5. Buem	-0.257	-0.265	-0.264	0.515		
6. Tamale	0.596	0.501	0.624	-0.256	-0.324	

Source: based on data derived from Census 1960 and programmed and computed by author.

[1] Values of ±0.230 or over are significant at the 95 per cent. level or over.

The six 'islands of development' just outlined recorded the most rapid population growth between 1948 and 1960 (Engmann, 1965), primarily through net immigration. Comments on other demographic characteristics will be found in chapters 9 and 10.

A statistical analysis of selected data by means of the Spearman's Coefficient of Rank Correlation suggests that of the six 'islands of development' in question, the 1st, 2nd, 3rd and 6th are similar to one

another in varying degrees. The 4th and 5th are similar to each other, but different from the former four (Table 1.6). The reasons for these differences appear to be economic. It will be clear from the preliminary descriptions of the 'islands' given above, and in chapters 9 and 10, and elsewhere in this thesis that the chief reasons for these differences are economic; also that the economic activities of the former 'islands' are mostly urban-based or urban-related, whilst those of the latter two 'islands' are predominantly rural.

The weaknesses of the data used will be discussed in chapters 2 and 7 and elsewhere in this thesis. A further refinement of the definition of the 'islands of development' would be useful.

It is beyond the scope of the present work, to trace the development of, and numerical increase in, 'islands' over the past 50 years. If, as has been suggested above, the evidences of development and stagnation soon show in the population structure some incidental light will be thrown on these changes in the review which follows of Ghana's population censuses (Chapters 3, 4 and 5).

CHAPTER 2

CAUSES OF DISCREPANCIES AND MISUNDERSTANDINGS IN POPULATION ESTIMATES IN GHANA (1891-1960)

> "The imagination of the Native peoples the Forest with spirits and the imagination of the Officials peoples it with men, but experience tends to dispel the fears and hopes of either".
> (Census Report, 1911,p.12)[1]

Perhaps one of the most serious problems facing the human geographer in the Tropics is the paucity of reliable data on most population trends. Most faulty conclusions arrived at derive from this fact. The study of Ghana will illustrate the nature and measure of the problem. Past records, official reports (including those of the Medical and Labour Departments), census returns, surveys and maps will be analysed for significant trends, and to identify the sources of error or misunderstanding which were echoed in the statement quoted above. Aspects and interpretations that have a bearing on the problem will be drawn out. Any otherrepresentative country in Tropical Africa could furnish material for this type of analysis.

The general problem of identifying demographic trends cannot be underestimated (United Nations, Demographic Yearbook, 1966) because as Beaujeu-Garnier(1966, p.6) explains:

> "... the official statistics of even the most advanced countries are not free, for various reasons, from serious errors, whilst in the other countries the statistics are embryonic, the methods of collection experimental ... Even the criteria utilised are often different and one is confronted by tables with similar nomenclature but different meaning".

1 Census Report to be known hereafter simply as Census.

Table 2.1.1

African Population, 1891-1960, Ghana.

Administrative Region	1891	1901	1911	1921	1931	1948	1960
Total (including Togoland)	-	-	-	2,296,400	3,160,386	4,111,680	6,711,037
Total (excluding Togoland)	-	1,548,945	150,193	2,108,461	2,866,715	3,728,963	-
The Colony	764,185	895,330	852,396	1,171,913	1,571,362	2,044,886	3,728,419
Ashanti	-	345,891	287,591	406,193	578,078	817,782	1,694,312
Northern Territories	-	307,724	361,806	530,355	717,275	866,295	1,288,306
Togoland	-	-	-	187,939	293,671	382,717	-

Sources: Census Reports, from 1891 to 1960.

Table 2.1.2

Average Annual Population Change per cent. 1891-1960, Ghana

Administrative Region	1891	1901	1911	1921	1931	1948	1960
Total (including Togoland)					3.2	1.6	4.2
Total (excluding Togoland)			0.3	3.5	3.1	1.6	-
The Colony		1.6	0.5	3.2	3.0	1.6	4.3
Ashanti			1.8	3.5	3.6	2.1	6.3
Northern Territories			1.6	3.9	3.1	1.1	1.8
Togoland			-	-	4.6	1.6	-

Sources: Census Report from 1891 to 1960.

Table 2.1.1 summarizes the recorded population changes in Ghana from 1891 to 1960; the trend appears to have been irregular. For the entire country, the average annual rate of growth appears to be 2.5 for the 60-year period dating from 1901 to 1960; for the Colony only, the average rate of growth from 1891 to 1960 appears to be 2.3 per cent. per year.

Probably, because of the various discrepancies which cropped up at the various censuses, this long-range historical view of the population trends in Ghana may be more valid for planning purposes than the individual decennial rates suggest. See Table 2.1.2.

Anyone who undertakes to study population trends of Ghana during this long period is in an unenviable position. For, as Kuczynski (1948, p.v) puts it: 'The basic material, in many cases, is too defective to permit the drawing of final conclusions'.

Furthermore numerous political officers were unaware of the inadequacy of population and vital statistics in the country. Those officers who were directly connected with demographic matters appeared to have some misconceptions which were at best only subjective fancies with little foundation in facts. Cardinall (1931, Vol.2, p. 147), for example, justified his misinterpretation of the census returns by reference to an unproved assumption or fancy that the rate of population growth in Ghana was 15 per cent. every ten years. Armed with this fancy the next step was to add to the base number, an annual average rate of increase of 1.5 per cent; but Kuczynski (op. cit., p. 531) denies the acceptability of such a rule of thumb.

Assuming even that the rate of increase in ten years was 15 per cent., the average annual rate of increase would be 1.4 and not 1.5 per cent.;

on the other hand if the average rate of increase per annum were 1.5 per cent., the total growth rate in ten years would be 16 and not 15 per cent. Other writers, for example Hilton (1960, 1966), and Addo (1964, p. 35), have mistakenly used the arithmetic mean instead of the geometric mean in estimating average rate of population growth. Thus sometimes the actual handling of the census returns were arithmetically faulty.[1]

When the medical authorities recorded in the Northern Territories more female deaths from say, cerebro-spinal meningitis, than male, this was taken to explain and confirm the male preponderance recorded at the census (cf. Census, 1901); on the other hand when the 1911 Census (p.30) returned more females than males for the same districts, it was argued that -

> "The figures point to the conclusion that more females are born than males, and the excess, therefore, of males in the adult group is caused either by emigration or immigration".

Consequently, the probability that ages may have been mis-stated or that the number of females may have been inflated, or the number of males underestimated, did not occur to the administration.

[1] The formula for computing the average annual population growth is -

$$r = \left(\sqrt[t]{\frac{Pi}{Po}} - 1\right) \times 100$$

where Pi is the population in the i-th year, Po, the population in the initial year, and r, the rate of growth (cf. United Nations Demographic Yearbook. 1966). Refinements have been suggested but not widely used. Hersch, for example, has proposed the concept of the Potential Natural Increase Rate:-

$r = \frac{(B \times E) - (D \times A)}{PL}$ where B is the number of births, E, the expectation of life at birth, D, the number of deaths, and A, the average age of the deceased persons, and PL, the life potential of the total population. (cf. Clarke, 1966, p. 138)

Not infrequently, huge additions were made to the census returns to make them conform to an historically assumed number. For example, in the Gold Coast Colony in 1891 (see Map 4.1), the total of such additions added no less than 98 per cent. to the original enumeration (Census, 1891, pp. 9-10). Similarly, in 1901, large additions were made to the returns because:

> "... in many instances .. particular towns well known to members of the Committee, were either over- or under-estimated, in most cases the latter". (Census; ibid., 1901, pp. 6-7)

A sample survey under close supervision should have been conducted to test the validity of this impression instead of making such cavalier additions.

Sometimes it was assumed that rural birth rates were higher than urban (Gaisie, 1964). The records show that this is not necessarily so.

If the recorded birth rate showed an increase, or the death rate showed a decline, the conclusion that the birth rate has increased or that the death rate has declined likewise seems unwarranted. As Kuczynski (1948, p.vi) puts it:

> "The only conclusion which may safely be drawn is that in the previous years only a minority of the births were registered and that registration is still incomplete".

Low proportion of children in the entire population was sometimes taken as proof of high child mortality rates. This seems unreasonable because, other things being equal, a country with a high child mortality is bound to show a higher ratio of children to adults than a country with a low child mortality (cf. Kuczynski, 1948, p.vi). This faulty reasoning probably arose partly because the officials overlooked an important fact: whereas every adult was once a child, not every child will become an adult. This is especially so in circumstances of high child mortality rates where a large number of the children are prevented

from growing into adulthood. Thus while the same number of children are born, the number of adults is not replenished fast enough; relatively, therefore, the child population should grow faster than the adult population (see Figs. 10.2.2., 10.2.4. and 10.2.7).

Because of the inadequacy of the data, most of what was said in the various reports were at best mere fancies. This is particularly inconvenient in the georgraphy of population because as Kuczynski (op. cit., p.11) puts it:

> "(1) Many observers lack the necessary sense for figures. ...
>
> (2) To form a correct opinion on demographic matters without conclusive figures is well-nigh impossible because demographic matters are not obvious".

For example, a Census Commissioner who was also an outstanding Administrative Officer, and the Senior Medical Officer for Health both wrote that 90 per cent. of the children died before reaching the age of six and many more died thereafter; but that at the same time the population was increasing rapidly owing to a large excess of births over deaths.

For such a situation to be even remotely probable, a net reproductive rate of about 10 per female would be required! But the statement itself precludes the conclusion drawn, since 9 out of every 10 females born died long before reaching puberty, and the remaining one probably never got there since many more died thereafter.

In several countries of Africa, e.g., Congo (Kinshasha), Ethiopia, Guinea, Liberia, Togo Republic, Somalia, no census in true terms has ever been taken. Probably, most of these countries would resort to sample surveys, as for example, Guinea (Blanc, 1955). While it is possible to ascertain certain selected characteristics of the population by means of sample surveys, it is difficult to see how a knowledge of the total population would be arrived at from such surveys. The problem is of

this nature: suppose one decided to sample 5 per cent. of the population, the sample size cannot be determined in the absence of knowledge of what the entirety is. But development plans are made to benefit the entire population.

At the general election in Ghana in 1956, it was widely rumoured that the number of registered voters was higher than the returns of the 1948 census had probably led people to expect; and foul play was strongly suggested or deeply suspected. In Nigeria, the first post-independence census foundered because more population had been returned for certain areas than was expected, and again, rigging of returns was suspected; the problem was complicated by an atmosphere in which there was regional struggle for political power.

Nevertheless, in each of these cases it hardly occured to the critics that probably the previous censuses were inadequate and misleading, and that the increases were mostly apparent only because they arose from more complete enumeration.

This unquestioned faith in census returns is particularly inconvenient for the new countries of Tropical Africa where it is uncritically accepted that the population grows at the rate of 15 per cent. every ten years (Cardinall, 1932, Vol. 1, p. 147).

The first official census in Ghana was taken in 1891; thereafter, censuses were taken every ten years to coincide with those of Britain. The cycle of enumeration was broken in 1941 and the war (1939-1945) was suggested as a reason for the break. But that very war could have been used as a compelling reason for taking a census of the population, since it was found necessary to conscript people into the armed forces and the homeguard.

Yet evidence is not wanting that the administration loathed taking

censuses, and at one time at least, agreed to take the census only after insistent requests with veiled threats from the Secretary of State for the Colonies (cf. Census, 1921, p. 21).

Probably, one of the least explored areas of social and political geography in Tropical Africa is the problem of census-taking.

Problems facing Census Enumeration

Commenting on the problems facing census enumeration in Ghana, Mr. Harper, the Chief Census Officer in 1921, had this to say:

> "... the conditions existing in the Gold Coast ... absolutely prohibit the collection of accurate and entirely reliable statistics on population".

From an analysis of the reports of population counts which took place between 1850 and 1960, at least three aspects of the poor conditions described by Harper may be identified:-

They are, firstly, the geographical aspects which include the physical conditions and problems of accessibility and of weather; secondly, the socio-demographic factors which include the beliefs and attitudes of the public; and thirdly, the administrative aspects which include the attitudes and skills of, and the role played by those administrative officers who were most closely connected with the censuses. These three subdivisions of the problems are only arbitrary: the analysis which follows will demonstrate their interdependence.

Geographical Problems

Except for the 1960 Census geographers were not brought in on the planning and execution of the censuses; there were no base maps to show the location of localities which could be used for checking the returns. Most of the population lived in villages and farm houses and hamlets and could not be reached; if the census coincided with the rainy season, i.e., June - September, swollen rivers, floods, and impassable roads and

tracks isolated several villages and farms (see Census, 1901, p.10; p.1; ibid., 1921; ibid, 1960, Vol. 5, p.198; p.200). Sometimes the rains came unexpectedly. Even during better times means of communication and transport were inadequate and a large number of bicycles were hired.

The system of market cycles whereby a group of towns or villages (7 in parts of the Eastern Region, and 5 in most of the Volta Region) form a system (closed) in which the market days rotate, implies that the population of the village where the market takes place would swell up while those of the others would diminish correspondingly; also, a large part of the floating population was never accounted for, especially during daylight. It is probable that some of the sudden changes in the population of some villages as recorded at the various censuses were partly influenced by the cycle of market activities. Besides, some markets drew their customers from very far afield, for example, Assessewa, Mankesim and Coal-Tar.

In most of the towns and villages there has been no rational system of numbering houses and compounds; the absence of streets and street names, and of rational layout of the houses; the monotonous architectural uniformity of the houses, compounds and huts, and the absence of access roads made not only the initial counting but also post-enumeration checking very difficult.

Again, in some parts of the country, e.g., Frafra and Kusasi districts, the localities lacked a firm nucleated character of residence distribution; this meant that farm houses of one locality merged imperceptibly into another, and the population was scattered over a relatively wide area. Each farm house sat in the middle of its farm and was probably not accessible, let alone visible, from the outside. Conditions such as these would lead to errors of, and omissions in, counts; enumerators in

such districts would have more distances to cover to enumerate the same number of people than those working in other parts of the country; sheer physical fatigue would make them more prone to avoidable errors.

Throughout Ghana, several villages and towns bear the same names; such a multiplicity of place names in circumstances where there were no base maps were bound to lead to considerable confusion (see Chapter 10).

Socio-Demographic Problems

Yet another problem was the suspicion that census was a cover-up for subsequent taxation; this created resistance and antipathy in the minds of the public towards censuses. Sometimes the sentiment was acted out in the form of haughty indifference and passivity; at other times it erupted in political upheavals and open resistance to enumeration. When the feelings were demonstrated overtly, the fact was known. More insidious, however, was the passive resistance which was very widespread and which probably caused more trouble than the administration cared to acknowledge. Sometimes the population made themselves scarce; or teenagers, especially males, understated their ages; older adults tended to overstate their ages to avoid paying taxes. The result of such evasions would be under-enumeration.

Another socio-demographic factor was the ignorance of most people of their ages (cf. Census, 1931, Vol. 1, p.166; ibid., 1948, p.13) because of widespread illiteracy. Mis-statement of ages would produce the following results: if, for example, the ages of girls were overstated either because of very rapid physiological development or early marriage or malnutrition, they would be excluded from their proper cohort and be included mistakenly in an older cohort. The effects of these shifts on age/sex structure would be an appearance of female deficit in the birth

cohort concerned, and a female surplus in the next older group. Similarly, if ages of teenage boys were understated, it would cause a mistaken appearance of male deficit in their proper cohort, e.g., 13-19 years, and a male surplus in the younger age group. Such shifts in age/sex structure consequent on such male/female age mis-statements - that is, a large male preponderance followed by a massive female preponderance - might lead some people to the easy suggestion that there has been some male selective emigration or female selective mortality conditions through some epidemics, etc.

The curious age structure of the 1960 Ghanaian population at ages 19 to 24 should be viewed with the above analysis in mind. Furthermore the sudden shortage of females aged 5 to 9 years in some parts of the Northern and Upper Regions of Ghana, e.g., Frafra and Kusasi, may have resulted from either an understatement of the ages of teenage boys, or overstatement of ages of girls aged 5 to 9 years; or both.

The suggestion by Grove (1963, p.16) that this girl shortage probably arose from female selective deaths resulting from female circumcision, and also arose because boys were better fed and cared for than girls, is preposterous. The argument precludes the conclusion arrived at.

Some people, especially rustic girls, make themselves scarce merely because they are shy. This last factor may account for some of the apparent ignorance of ages.

Children, infants, the sick, the infirm, temporary visitors, house servants and maids, etc., are likely to be overlooked during population counts.

The widespread superstition that it is unlucky for one to disclose the number of one's children could lead to considerable under-enumeration.

If there are disputes over boundaries or areas of jurisdiction, the

people in the disputed areas either refused to be counted or showed indifference for the reason that their chief resided in another district (Census, 1901, pp. 4-5). In 1960, an example of such serious disputes was reported as follows:

> ".... In several areas in the Eastern Region, enumeration areas cut across the areas of jurisdiction of local councils and traditional authorities....'not unnaturally such situation rekindled the embers of inter-State boundary disputes'. There were complaints at Atwereso in the Western Akim Abuakwa Census District about many of their subordinate villages being in another local council in the Western Region. Similar complaints were echoed at Adeiso and Akokoaso areas" (Census, 1960, Vol. 5, p. 196).

The report illustrated above confirms the view that the disputes over enumeration areas were both intra- and inter-regional in character: similar long-standing disputes and rivalries between the peoples of Kwahu and of Akim-Abuakwa, and between the Yilo-Krobos and Manya Krobos, etc., were revived during the census (ibid , p. 197).

Part of the problem of incorrect population returns at censuses arose from chiefly cynicism: some chiefs expected advantages in the form of favours, prestige and perquisites, etc., from the government and were led to inflate their numbers to demonstrate their loyalty to the administration. Population numbers determined representation on the various advisory and legislative councils, the size of gun powder permits, the provision of schools, the distribution of development schemes and grants, the provision of roads and piped water, etc., and above all, the political stature of chiefs among their fellow chiefs, especially in the Provincial Council of Chiefs (see Census, 1960, Vol. 5 pp. 192; 196; 198-99). Knowing the advantages accruing from large population numbers, some chiefs included in their returns localities which properly did not belong to them (cf Census, 1901, pp. 4-5); if the locality so 'transferred' was an important market town it meant that

the chief became entitled to the proceeds from the tolls collected at the market - an important source of revenue. This fact in itself could serve as a strong inducement to trespass. Most inter-tribal or inter-district feuds which took place during the period 1900 to 1950 arose partly over such rival claims. Even when the subjects have emigrated to other districts their chiefs still tried to wield, and often succeeded in exercising, political and spiritual influence over them.

With the foregoing in mind, it should not be difficult to appreciate why some of the chiefs preferred a de jure census enumeration to a de facto one (cf. Census, 1960, Vol. 5, p. 192). This arises from the fact that the system of shifting cultivation, migrant farmers, migrant labour and travelling fisherfolk, etc., depleted some areas of their population Consequently, even where officially a de facto population count was intended in principle, some chiefs made it a de jure one in practice.

Drawing their justification from the biblical tradition (cf. Census, 1960, Vol. 5, p.loc.cit.), that "all went to be enrolled, each to his own city" (Luke 2, 1-3)[1], some paramount chiefs (e.g. of Shama), sent out instructions to their sub-chiefs, headmen and elders to tell their subjects to return to their respective home-towns to be enumerated.

The fear on the part of some strangers that the census was a preliminary step to deportation has long been a factor in incorrect population enumeration, especially of non-Ghanians, but as yet not sufficiently appreciated.

[1] St. Luke, 2, 1-3; In those days a decree went forth from Caesar Augustus that all the world should be enrolled ... And all went to be enrolled, each to his own city".

Note: For some translations, read Taxed for Enrolled.

During my field work for the paper on the distribution of Ghanaian tribal groups (Engmann, 1965-66)[1], I discovered a striking absence of Nigerians (i.e., Ibo petty traders and pedlars) from certain districts (e.g., Kwahu). On further investigation, I was informed that they were actually chased out between 1940 and 1950, and since then, have been barred from settling there. Both the Kwahus and the Nigerian elements concerned are predominantly petty traders and there appears to be a conflict of economic interests in this case. There are other instances involving other districts and ethnic elements. At the census of 1960 (Census, Vol. 5, p. 199), it was reported that Togolese nationals resident in Accra, Ewes in Nsawan, Nigerians and the Gao communities resident in the diamond-mining districts of West Akim-Abuakwa, Western Akim, Oda-Swedru Census Districts, etc., often barred their doors on the approach of the enumerators and refused to co-operate for fear that the information would be used as a basis for deporting them. The Ewes appeared to be particularly prone to this kind of apprehension.

The Administrative Problems in Enumeration.

Not infrequently, failure to achieve good results at censuses was blamed on the public. It is the view of the present writer that the administration bears the major share of the blame.

An examination of the various census reports reveals the following deficiencies:

1. Adequate funds to meet the cost of enumeration were not provided

[1] Engmann, E.V.T. (1965), 'The Distribution of Major Tribal Groups in Ghana'. A paper (unpublished) read at the Annual Conference of the Ghana Geographical Association, Cape Coast, April.

2. The administration failed to prepare base maps, and to adopt a systematic way of identifying places, houses, compounds and other buildings. This deficiency arose because geographers were not brought in on the projects.

3. During the early period, persons who were not familiar with the local geography or language were employed as enumerators in circumstances where there were no base maps. Field assistants were not briefed (see Census, 1921, p.21) as to what they were expected to do before embarking on their jobs; and censuses were undertaken without carefully assessing the number and qualifications of the staff required. In 1948, I was employed as an enumerator together with others; we were not briefed as to what to expect or what to do. Instead we were instructed to collect schedules (from, I think, a certain table in an obscure room) and to go to the village concerned and count its population. The boundaries of the village were not clearly marked; we stopped where we considered to be the limits of the village; I think also because we were tired and frustrated. This state of affairs, multiplied several times over, would lead to either serious discrepancies arising from omission or duplication of counts.

I recollect that while we were doing our rounds one woman shyly remonstrated that some people had already gone round to her asking similar questions. At that time I did not appreciate the implications of her remonstrations.

We were promised payment of some sort, but in the end we were never paid.

4. Sometimes whole villages were counted in groups. This practice enhanced the chances of errors in counting, e.g., omissions; more-

over, it was impossible to check on the completeness or otherwise of the counts. In such circumstances, the infirm, the sick, and children who could not attend the assembly, the floating population and a few conscientious objectors would not be accounted for.

5. Definition of ages, occupational structure, nationality, ethnic affinity, etc., were vague and confusing; ages were not rationally grouped.

6. The administration did not give careful enough thought and time to the censuses. In 1921 (Census, 1921, p. 21), the Chief Census Officer reported as follows:

> "Had I known before leaving London that I was to be placed in charge of the Census, I would have spent part of my leave in study of the subject, more especially in consideration of those statistics which could be most accurately collected under conditions existing in the Gold Coast. I was, however, not so informed, and I arrived at Accra from leave of absence, in July, 1920, without any information as to the task I had to perform.
>
> By the third of August, however, the Chief and the Provincial Commissioners had been informed of the proposed date of the Census, and had been invited to submit any recommendations they cared to make... No such recommendations were made by them, either in writing or at the Political Conference held in Accra in October, and accordingly, preparations for the 1921 Census were begun on similar lines to those followed in 1911".

7. The officers demonstrated indifference or apathy towards the censuses. As the Chief Census Officer (Census, 1921, pp. 21-22) put it:

> "If the work is regarded as an imposition and undertaken in perfunctory spirit and without intelligent supervision, it is not likely to be a marked success".

It appears that this attitude arose because -

> "The Census was in fact an addition to the ordinary duties of the Political and other officers, and in 1921 as in 1911, some officers must have presumed to have been fully occupied by their ordinary duties that the Census received from them less attention than it deserved" (ibid., p. 16)

As an example of inadequate attention given to census matters the Chief Census Officer said:

"I drew up a program of a tour during which I would have met with those officers who were to take the Census ... I could have cleared up many difficulties and made their task and mine lighter ...Unfortunately, circumstances prevented me from leaving my proper duties at Accra, except for a short tour..." (p.21).

He continued:

"The whole of the work at the Headquarters was done by myself simultaneously with my ordinary duties, including the counting and distribution of forms, until my transfer to act as the Registrar rendered assistance imperative when a Second Class Clerk was assigned to me for checking some figures".

The report (cf. Census, 1921, p. 16) alleged that some of the officers, for the reasons given above, loathed census-taking.

As the following statement suggests:

"It would be idle to deny the unpopularity of the Census amongst officers who had to carry it through".

8. Sometimes officers who had been assigned responsibility for the census of particular districts were suddenly transferred in the middle of the work without notice; and not infrequently without substitutes to replace them (Census, 1911, p. 30), as the following passage shows:

"Adequate arrangements appear to have been made for enumeration but the District Commissioner was transferred before the census was taken. On his return, he found that no steps had been taken to enumerate the people in the Central Division...He reports that enumerators experienced considerable trouble, that there was a universal fear of hut tax and in some cases on the approach of the enumerators villages were deserted".
(Cf. Census, 1960, Vol. 5, p. 199).

9. There was no comprehensive system of registering births, deaths, marriages, and migrations (Kuczynski, 1948, pp. 446-467).

10. There were no reliable means of informing public opinion on the importance of the census, and to disabuse their minds of fears and suspicions, and to instruct them on what was expected of them;

briefly, to solicit their co-operation (cf. Census, 1960, Vol. 5, pp. 202 - 203).

11. The reprehensible practice of enumerating the population on more than one schedule meant that the report failed to take an integrated view of the population. Examine, for example, the 1948 Census Report. It is not possible to ascertain the total population of, say, Accra on one table. To obtain this total, one has to add together figures from several tables relating to Accra Town, Accra Rural, African Population, non-African population, etc. This is inconvenient, frustrating and time-consuming, especially to the non-specialist, and an invitation to avoidable errors of interpretation (see also Chapter 8 below).

12. The administration employed during the earlier period tax-gatherers, prison warders, uniformed policemen (cf. Chapter 5, below), officers of the Department of Public Nuisance and such-like people, as census enumerators, especially in the villages where, paradoxically, the need to allay the fears of the public was most urgent.

Such persons could not expect co-operation from the public, any more than cats would receive from mice were the former set to take a census of the latter. This attitude of the administration underscores their abysmal lack of insight and understanding of census matters (cf. Kuczynski, 1948, pp. 405 - 406).

13. The administration was partly responsible for the fact that the people associated censuses with some dark designs. It all began when in April, 1852, the Poll Tax Ordinance, the purposes of which was to tax every man, woman and child, as a means of ascertaining the total number of the population (Blue Book, 1852 pp. 84-85) was enacted (see Chapter 3 below).

The unco-operative attitudes of the public must have given the administration considerable annoyance; but in continuing to engage the services of the type of persons described in section 12 above, the administration confirmed the worst suspicions of the public. This also gave grounds for wild, if sometimes, bizarre rumours.

14. The arbitrary drawing of regional and district boundaries which took little account of areas of jurisdiction of traditional authorities and tribal units caused considerable vexation. To the natives, this action appeared that they were forcibly being transferred from their rightful chief to another chief.
Furthermore, the frequent changes of boundaries of regions, districts, towns, etc., contributed no small measure of the problems of census taking and evaluation (see Census, 1960, Vol. 5 p. 196).

15. Unfavourable political climate sometimes caused serious difficulties. For example, between 1901 and 1911, parties of soldiers were sent to parts of the Northern Territories to 'restore order or to punish the natives for looting and murdering traders'. It was hardly surprising, therefore, that in most parts of the Northern Territories, the enumerators were received with considerable suspicion. When this took place, the report (Census, 1911, p.46) went on:
'.... counting was not proceeded with.
The Frafra district I did not attempt as it would not have been safe to send anyone to count them without an escort...'
(See also Census, 1948, p.9; ibid., 1960, Vol. 5, p. 196).

16. Not infrequently, counts in the various districts were not taken at one and the same time (cf. Census, 1901, p. 3; ibid., 1891, p. 8; ibid., 1948, pp. 8 - 9). The absence of simultaneity was a source of considerable error, the full amount of which could never be ascertained.

Summary

In the foregoing chapter some of the major problems facing assessment of population structure and growth trends were analysed. In particular, they include questions of suitable time and circumstances in which to hold censuses, the effects of market cycles, and of short- and long-term migrations, and seasonal activities; definition and identification of houses, compounds and other dwelling places, a definition of household; absence of a logical system of numbering houses and inaccessibility; the multiplicity (or ubiquity) of place-names; incorrect age estimates or declaration, inconvenient and, not infrequently, incomparable age groupings; inadequately trained staff, and problematic attitudes to census-taking both of the chiefs, the officials and the public.

For some of these problems only partial suggestions can be offered; but most of them call for careful, exhaustive and continuous study and research.

Age grouping must be standardised; single and five-year groupings appear to be the standard practise; in a predominantly illiterate society ages could be estimated by reference to important historical events which are germane to the interests of the district concerned; the identification of such significant mile-posts calls for patient and thorough research and continuous up-dating.

It is not enough that such dates and events have been established: the public must constantly be informed of them through every available media of mass-communication - press, radio, television, films, public meetings, lectures, discussions, etc.

The most suitable time for taking a census would be one in which mobility for the census staff is most convenient, whilst at the same time population movements are at their lowest. These two conditions -

high mobility and low movement - are directly related; here, too, careful research for a happy compromise period is called for.

Place names may be standardized by giving each locality an identification code number. This will be facilitated by the preparation of special census maps on a scale not smaller than 1:250,000· preparation of a list of place names arranged in alphabetical order for each district, and also for the entire country.

The coding system should be so planned as to be amenable to expansion and to any number of sub-divisions.

For example, in Ghana more than 200 traditional authority areas have been identified, but often several are combined to form one census district; there are at the moment 69 census districts; these 69 census districts have in turn been grouped into 9 Administrative Regions. It is possible that with increasing population and changes in its areal distribution the number of both the census districts and administrative regions will be increased.

Thus, any coding system should allow for at least 200-300 census districts based on traditional council areas.

Table 2.2 is a suggested coding scheme for 140 census districts; the census districts may be numbered from 001 to 139; each region is made up of a group of census districts bearing consecutive code numbers. In this table census districts 020 to 039 comprise the Central Region. Each census district is allowed approximately 1,000 localities, starting from 001 to 999; this number may be raised to 9,999. Each locality will comprise approximately 1,000 enumeration areas, also starting from 001 to 999; the enumeration area being the smallest census unit which can be enumerated by a single person in a working day of six to seven hours

This scheme allows for at least approximately 140 Census Districts, 140,000 (140 x 999) localities, and over 100 million (999 x 999 x 140) enumeration areas.

Table 2.2

Coding Scheme for Census Districts and Localities.

Administrative	Region	Census District Code number.	Locality Code number	Enumeration area code number
Western R	1	001-019[1]	001-999	001-999
Central R	2	020-039	"	"
Accra C.D.	3	040-049	"	"
Eastern R	4	050-069	"	"
Volta R	5	070-089	"	"
Ashanti R	6	090-109	"	"
Brong-Ahafo R	7	110-119	"	"
Northern R	8	120-129	"	"
Upper R	9	130-140	"	"

1 The dummy zeros are intended to facilitate the use of the computer; also to make for symmetry.

Thus the code number 002-031 would signify the 31st locality in the 2nd census district which is known to be in the Western Region. Similarly, the code number 135-001-008 would indicate the 8th enumeration area of the first locality in the 135th census district which is in the Upper Administrative Region of Ghana.

These code numbers would be prefixed by '1' or '2' etc. to indicate the Administrative Regions in which they were located; thus 002-031 could be re-written 1-002-031, but this is unnecessary since the 2nd census district (i.e. 002) is known to be in the Western Region, and the 135th district is in the Upper Region.

When the hyphens are removed, the code number for 002-031 becomes simply 002031 and 135-001-008 becomes 135001008.

A similar system could be devised for numbering houses/compounds and other buildings in the towns and cities. Thus a city or town may be divided into districts based on the census enumeration areas or on suitable combinations thereof; each street should have an identifying number which should form part of each house number. Thus a house number could be made up of (1) a code number showing the district in which it is located; (2) the street in which it is situated and (3) the actual number of the house. This calls for further research.

Presently, the system of numbering houses and other buildings even in the cities is illogical and confusing. Not infrequently, Arabic numbers and Roman letters are combined to form a house number. This mixed and inflexible system is unsatisfactory and must be avoided. Again houses bearing consecutive numbers are sometimes found several blocks or streets apart. This is time consuming and frustrating to both the research student and the administrator.

CHAPTER 3

POPULATION ESTIMATES IN GHANA DURING THE PERIOD PRECEDING 1891

> "No Census of the Population of the Colony has ever yet been effected although fruitless attempts have been made... By a Poll Tax which is now being collected their numbers will be ascertained without arousing the suspicion above alluded to.. but... it would appear ... that it will not exceed 300,000 thinly scattered over a Territory of about 8,000 Square Miles" (Blue Book, 1852, pp. 84-85).

Early attempts to estimate the population of Ghana necessarily were limited to that part of the country which was effectively under the control of the British Government, that is, the Gold Coast Colony which then comprised the coastal zone extending from Half Assinee in the west to Prampram in the east (see Map 4.1). For over half a century before the first official census of 1891, several attempts had been made to estimate the population but had failed primarily on account of the attitudes and incompetence of the (Gold Coast) Administration.

In 1846, Winniet in his report on the Blue Book estimated that the population of the Gold Coast was no less than 275,000 scattered over a territory of about 6,000 square miles (Blue Book, 1846, pp 80-83); this figure works out at about 45 persons to the square mile. In 1849 (Blue Book, p. 78-9), it was reported that an attempt to count the amount of the population had failed because of the suspicion and resentment shown by the people, who considered inquiries about their numbers an invasion into their private lives by an impertinent government. Nevertheless, the population was estimated at 288,000, a figure which was 5 per cent. up on the estimated total for 1846 (Kuczynski, 1948, p. 405). Governor Fitzpatrick stated subsequently that he considered the estimates fair. On the contrary Governor Bannerman (State of Colonial Possessions, 1851, Part 1, p. 185) doubted the correctness

of those estimates and stated that the numbers had been exaggerated, and that the country was far from being thickly populated. What was considered a thick population was not defined, but it would appear that for him a density of 45 persons to the square mile was very high. He added that boundary changes agreed upon with the Danish Government as a result of which the Danish forts and possessions were ceded to the British Government, had nearly doubled the population of the Gold Coast Colony claiming British protection (State of Colonial Possessions, 1850 pp. 197-8).[1] But in 1851 Governor Hill took account of the extended territory, increased population, and views of men who had resided in the country for many years, and gave as an estimate a total population of 400,000, occupying a territory of about 8,000 square miles; a figure which works out at about 50 persons to the square mile (Blue Book, 1852).

On 19th April, 1852, that is a week before the above-mentioned document was dated, the poll tax ordinance was passed (Kuczynski, 1948, pp. 405-6):

> "At a general meeting of the chiefs and head men of the towns and districts upon the Gold Coast under British protection, held at Cape Coast Castle on the 19th day of April, 1852, in the presence of his Excellency Major Hill, Governor and Commander-in-Chief, and the civil and military officers of his government, it was unanimously resolved and agreed upon, -
>
> I. That this meeting, composed of his Excellency the Governor, his Council, and Chiefs and head men of the countries upon the Gold Coast under British protection, constitutes itself into a Legislative Assembly...
>
> V. That ... the Chiefs and head men do, for themselves and their people, voluntarily agree to pay annually to the Government the sum of 1s. sterling per head for every man, woman and child residing in the districts under British protection.

[1] The British Government became the United Kingdom Government after 1707, but nonetheless the former term continued to be used mistakenly in the official documents. Sometimes the limited term 'English' was also used.

> VI. That the collection of this tax be confined to officers appointed by his Excellency the Governor, assisted by the Chiefs, who, in consideration of annual stipends to be paid to them by the Government, agree to give in their several districts their cordial assistance and the full weight of their authority in support of this measure, and to aid the tax gatherers in taking the census of the population, and in collecting the tax".

A tax structure of this sort, which taxes even infants and in consequence increases the burden of those with large families, was ill-considered. It was obvious that people would react by either making themselves scarce or not declaring the entire number of their dependants.

It was stated that:

> "When the collection of the tax is complete we shall be enabled to arrive at a more correct estimate of the numbers enjoying the protection of Great Britain..." (State of Colonial Possessions, 1852, p. 197).

The total amount expected from the tax was £20,000, apparently based on the previously estimated population of 400,000. In actual fact, the total proceeds amounted to £7,567 6s. (or 151,346 shillings), on the implications of which the Blue Book (1853 pp. 79-80) had this to say:

> "From the amount collected in the form of Poll Tax from the Natives of the Gold Coast all of whom pay it (with the exception of the Asian Tribes who were exempted in consequence of the Ashantee forces over-running their country during its collection), the population may be rated at about 151,346, thinly scattered over a territory of about 8,000 square miles".

The number of the Assins so exempted was variously estimated at between 30,000 and 3,000. The flaws in the interpretation of the tax returns stated above are too obvious to require further elaboration. Nonetheless, Governor Hill, in his report on the Blue Book, estimated the population at 300,000 because in his view the tax had not been collected by the officers with sufficient zeal. The proceeds realised from the tax continued to fall, and in the meantime the Poll Tax caused several serious incidents, including civil commotion and distoolment of

of chiefs 'for selling out the people to the British'. The British Government responded with a savage military bombardment which partially destroyed in 1854 places like Teshie, Labadi and Christiansborg (Census Report, 1921, p. 10).

In 1858, the Poll Tax Ordinance was amended to exempt certain categories of people from tax payment, e.g. infants, poor women with neither husbands nor heads of family to pay for them, persons too old to work. Thus as long as one could place oneself in any of those categories of persons who had been exempted from taxation, one could avoid payment of the tax. Avoidance of tax payment could be achieved not only by making oneself scarce, but by mis-statements.

Mothers had reasons for understating the ages of their children so as to qualify as infants, or hid them completely from view; middle-aged men and women also had reasons to overstate their ages or go into hiding. Married women could say they had no husbands, with the aim of avoiding tax payment.

There was another source of incorrect returns, in this case, arising from the officers who collected the taxes. If one wished to avoid paying the full value of the tax due, one could collude with the itinerant tax collector to split the amount by giving the latter say, a quarter thereof. For tax gatherers, therefore, correct enumeration of the population was not in their best monetary interests.

In a conversation (May, 1967) with a postgraduate student from Somali, I was informed that in 1966, the Somali Government introduced a bill in Parliament to enable it to take a census of the population; the bill was defeated for fear that a correct enumeration of the population might expose the corrupt practices of the tax agents who had become a powerful element in the society.

In 1861, receipts from the Poll Tax had dwindled to a mere £1,552. Thereafter the ordinance was allowed to lapse, partly because the tax had become uneconomical to collect. Nonetheless, in the Colonial Office List for 1862, the population was estimated at between 250,000 and 400,000, occupying an area estimated at between 6,000 and 8,000 square miles, and limited to the "forts and to a distance of cannon-shot around them" (p. 61). In 1868, the same source reported that there had been a reduction in both the population and the area of the territory, and so the population was estimated at some 200,000 people, occupying an area of approximately 4,500 square miles. As a result of the Royal Convention which was signed at the Hague in 1872, both the area and the population of the Gold Coast, it was reported, doubled (Colonial Office, p. 136)

Ten years later, in 1882, Administrator Moloney (State of Colonial Possessions Reports, 1880-2, p. 113), reported:

> "The number of the population of the Gold Coast is wholly unascertained. Since the imposition of the poll tax in 1852, an estimate of 400,000 as a population has been handed down as a legacy" (p. 113).

The fact that the estimate of 400,000 was made before the poll tax became effective apparently escaped Moloney. Again, he regretted that steps had not been taken to count the population of the Gold Coast in 1881 when the census of Her Majesty's Empire was being taken generally; once more he overlooked the fact that attempts to have the population counted in 1881 failed because of an absence of co-operation on the part of the Gold Coast Administration.

In 1880, the Secretary of State for the Colonies in a despatch dated 27th April, directed that a census of the population of the Gold Coast be taken in April, 1881 as part of the general project of counting the population of the British Empire. Governor Ussher replied that any attempt to take a census of the population was bound to fail, and that

the population was estimated at 400,000. In acknowledging receipt of Ussher's reply, the Secretary of State again asked for as close an estimate as possible of the supposed population of the Gold Coast. Consequently, instructions were sent out to the district commissioners to furnish information about the number of population in their districts The political officers were not enthusiastic about this project, and in his report Administrator Moloney expressed doubts as to the effectiveness of the attempts made by the district commissioners. The Secretary of State stuck to his position and, in a subsequent despatch, requested that census figures be sent to the Registrar General in England. In response, an estimate of 135,761 as a total population was sent with explanatory notes as to how it had been derived. Once more the Secretary of State for the Colonies remained unimpressed and in another despatch asked again for census figures.

It is difficult to understand the attitudes of the Gold Coast Administration in this matter, seeing that in the other West African Territories of Gambia, Nigeria and Sierra Leone, where the same problems of native suspicion, antipathy, ignorance, etc., had been reported, censuses were nonetheless taken in 1881 in accordance with the request from the Secretary of State for the Colonies (cf. Kuczynski, 1948, p. 309; p. 575; pp. 161-3).

In response to the last request from the Secretary of State, Governor Rowe sent an estimate of 651,000 population, a figure which had reportedly been derived mostly by counting of fighting men belonging to the Fanti Tribes who had assembled at Dunkwa on 14th April, 1873 ("including also people who did not fight, e.g. the People of Aowin or Appolonia, Wassaw. and Axim or Secondi who, with the rest of the Ahanta Tribes and the Elminas, embraced the cause of the Ashantis and held

Table 3.1.

Population estimates of the Gold Coast Colony between 1840 and 1891

Date of Estimate	Estimated Population	Area of Territory	Person per square mile	Estimated annual increase per cent.
1846[1]	250,000	6,000	45	1.5
1851[2]	400,000	8,000	50	"
1873	651,000			
1883	661,000			
1887	1,406,450	29,401	48	
1890[3]	1,600,000[4]	39,000		

[1] State of Colonial Possessions, 1850, pp. 197-8

[2] Blue Book, 1852, Kuczynski, 1948, pp. 405 - 6; 411 - 412

[3] Blue Book, 1890, pp. 1 - 2.

[4] The area of the Gold Coast Colony was variously estimated at between 29,401 and 39,060 square miles; and during the last decade of the nineteenth century the area was frequently given as 39,000. See Map 4.1.

Table 3.2

Estimate of the Population of the Gold Coast Colony 1873

Central Districts, 72,000 fighting men x 6	..	432,000
Wassaw, 10,000 x 5	...	50,000
Other Tribes and Districts: 50,000 + 6,000 + 48,000 + 20,000 + 15,000 + 30,000	...	169,000
Total	...	651,000

Source: Kuczynski, 1948, pp. 411-412

aloof, whose numbers were merely estimated"). To obtain the total population, the number of fighting men was multiplied by 6, as the report explained:

> "To multiply these numbers by six, as allowing for every fighting man, the existence of one woman and four old people and young children, does not appear ... to be unreasonable". (Kuczynski, 1948, p. 411).

On the basis of the principle stated above, the total of 651,000 as an estimate of the total population of the Gold Coast was arrived at as follows: (Table 3.2).

It is not clear why the number of fighting men, as the table shows, was sometimes multiplied by 6, but at other times, by 5. Nonetheless, in his accompanying report, likewise dated 21st December, 1883 (Gold Coast Census, 1883, Enclosure No. 1), Sir Robert (then Colonel) Harley, then Administrator-in-Chief of the Government of the West African Settlements, said:

> "The estimate of the entire population of these districts as shown in the accompanying table amounts to over 651,000. I much regret my inability to offer more complete information, but the estimate thus given is the result of careful calculation and enquiry.
>
> It is not put forward as being absolutely correct - it is only offered as the best result I have been able to attain, and as subject to daily observation" (Kiczynski, 1948, p. 411).

It is interesting to note that although this population estimate was made ten years earlier, yet it was scarcely ever mentioned in the various estimates. Had the Secretary of State for the Colonies not remained adamant in his requests, this estimate might completely have been forgotten. The opinion that it was impossible to take a census of the population in the Gold Coast continued to be expressed several years later, but no effective steps appear to have been taken to overcome those difficulties. In 1884, the Blue Book reported:

> "... no means exist whereby a census could be taken of the Gold Coast settlements, the natives of which are suspicious of their numbers being counted, having, perhaps, a lively recollection of the old days when the poll tax was in force, besides which there are many other practical difficulties in the way of taking census in the Gold Coast, even supposing the native was not averse to it".
>
> (Blue Book, 1884 - 1886, p. 8).

The estimate reported for 1886 was 661,000, a figure 10,000 higher than the one given in 1883. Kuczynski suspects that there had been an arithmetical error (1948 p. 142). It is probable that at a later date someone discovered the inconsistency in the application of the principle on which the population estimates were based and tried to rectify the mistake by multiplying the number of Wassaw fighting men also by 6, instead of 5.

In 1887, however, a completely new estimate of the population was made which placed the total at 1,406,450, in an area of approximately 29,401 square miles (giving a population density per square mile of 48), the figure having been arrived at from information furnished by the District Commissioners and the Missionary Bodies, and by reference to official records. In 1890, the Blue Book reported an estimated population of 1,600,000, or an increase of 11.4 per cent. over the previous one (pp. 1 - 2).

It would seem that both these estimates were too high; but the administration must have reasoned that as the Secretary of State for the Colonies had rejected all previous lower estimates of the population until he was offered the high one of 651,000, he was more likely to trust inflated estimates of the population.

Thus not only the chief, but also the administration had reasons to inflate their population returns: large returns were equated with accuracy, and low ones taken as suspect. Chiefs who returned enlarged

estimates, accordingly, were singled out for special praise (cf. Census, 1911, p. 31). Such was the mental climate of collusion at the close of 1890, the year preceding the first official census of Ghana which took place in 1891.

CHAPTER 4

POPULATION CENSUS RETURNS FROM 1891 to 1921

> "In 1891 and 1901, estimates of the population unrecorded or underenumerated were added to the total on the returns.. if the returns of the recent census are any guide, these estimates of previous years are not only valueless but mischievous. It has been decided on the present occasion to accept the recorded population ... and to make no estimated additions" (Census, 1911, p. 5).

The total population returned at the census of 1891 was 768,882 for the Gold Coast Colony, excluding Kwahu and Krepi; the Gold Coast Colony then comprised the Western and Eastern and Volta Regions of 1960, and the Accra Capital District, but excluded North Kwahu of the present (1960) Eastern Region, and Ho, Kpandu, and Buem-Krachi Districts which then were part of the German Colony of Togo. Map 4.1 shows the evolution of present-day Ghana as a census unit from about 1850 to 1921. The 1960 Census covered the same area as that of 1921 (see Hilton, 1960, pp. 12-14).

During the First World War, forces from the Gold Coast captured the former German Colony of Togo. At the end of the war that Colony was partitioned in 1920 and part of it transferred to the French as a League of Nations mandate in compensation for concessions received by the British in the Carribean. The other half was administered with the Gold Coast as a mandated Territory of the League of Nations. After the Second World War when the League of Nations was replaced by the United Nations, mandated Togoland, with an area of approximately, 13041 square miles (Map 4.1) became a Trusteeship Territory of the latter, and continued to be administered with the Gold Coast (Census, 1921, pp. 137-8).

The total population returned comprised 357,584 males and 409,511 females; 1,787 people were returned as unclassified. There were about

873 males to every 1,000 females recorded.

Table 4.1 below gives the population returns in 1891 and 1901, and the estimated population figures for those years; the latter figures were intended to give a more accurate picture of the size of the population.

Notice, for example, that the total population recorded in 1891 was 764,508, but the estimated figure was 1,469,508, excluding 4,374 for Atabubu. Compare Table 4.1 with Table 2.1.1 which gives the population changes between 1891 and 1960. Notice that no population figures were actually recorded for Kwahu and Krepi, but an estimated figure of 500,000 was assigned; also the proportion of estimated population varied considerably. For example, the recorded population for Wassaw was just over 73,000, but the estimate, supposed to represent the correct picture, was just under 124,000. Notice especially, that in every case the estimated population was higher than the recorded figure. The prevail- state of mind appeared to be one that distrusted low figures, and the practice of making large estimated additions seemed quite normal. The reasons for this state of mind which freely encouraged 'fiddling' with population returns have already been demonstrated (see Chapter 3).

The justification for those large estimates was that, the Census Committee mused,

> "It is apparent to any one with a knowledge of the Country that these figures do not accurately represent the population, and the inaccuracy is especially great as regards the interior parts of the Colony. Most, if not all, of the people of the interior are engaged in agricultural pursuits, and spend most of their time during the day on their farms, where a rude hut shelters them from the heat of the mid-day sun, and they return to their homes at night. This applies especially to the female portion of the community and the children, e.g., Axim, Aowin, Wassaw, Yankumasi and Denkera. Consequently it was very difficult for the paid enumerators to get at these people, and the returns supplied by the Native Chiefs are all more or less influenced by the dread of taxation already referred to" (Census, 1891, pp. 9-10).

Table 4.1

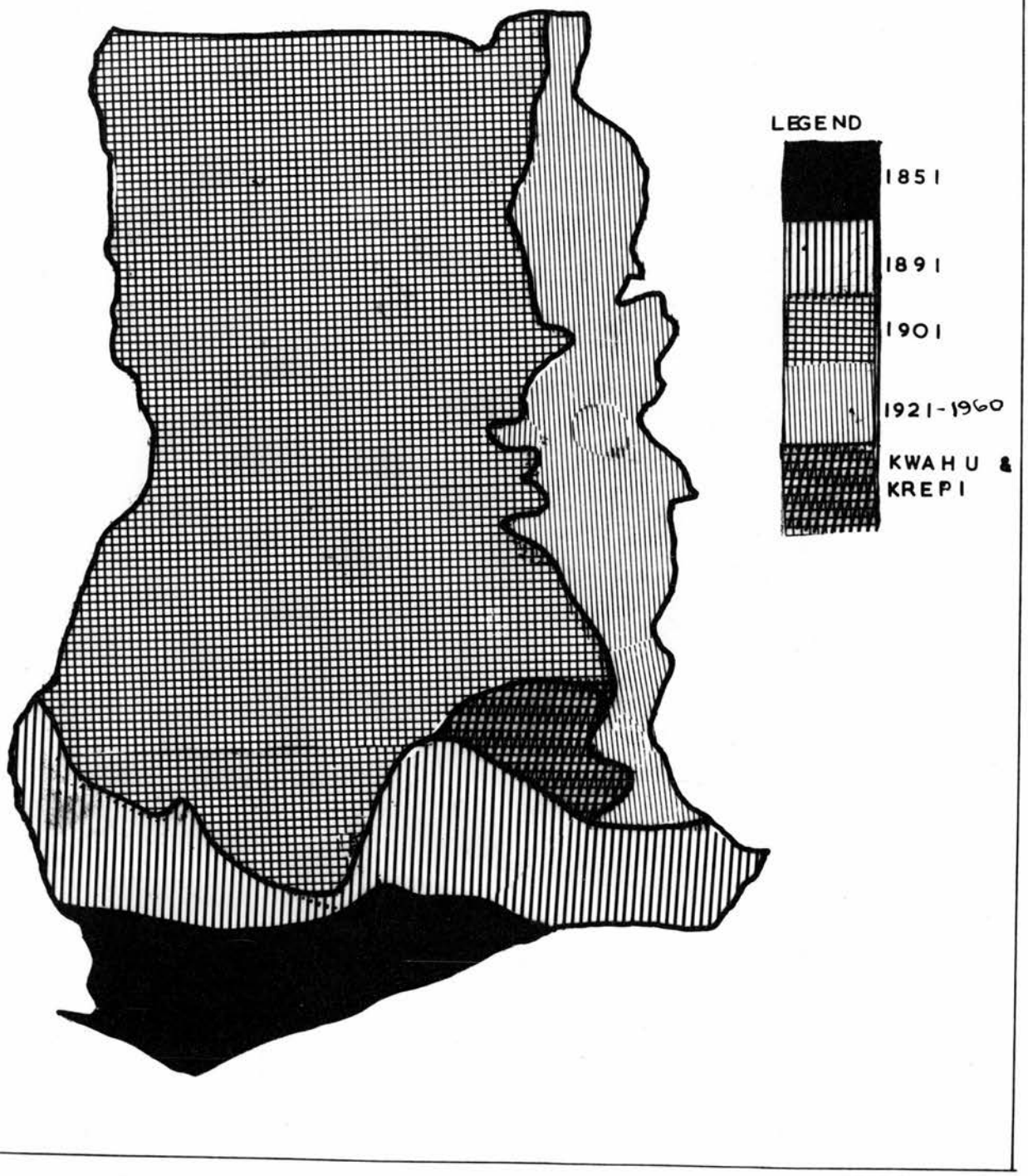
African Population, 1891-1901, Gold Coast Colony.

Districts	Returns		Estimates	
	1891	1901	1891	1901
Accra	91,612	103,651	121,612	153,141
Kwahu	..	39,490	500,000	
Krepi	..	163,997		173,997
Volta River	128,608		148,608	
Ada	46,869	46,487	56,869	56,487
Axim	38,870	18,130	54,870	33,130
Cape Coast	87,873	100,282	127,873	130,282
Keta	36,230	174,224	46,230	174,224
Prampram	10,908	13,404	15,908	18,404
Saltpond	138,828	57,820	148,828	87,820
Sekondi	29,863	34,325	34,863	42,325
Wassaw	73,683	80,603	123,683	100,603
Winneba	80,164	62,937	90,164	72,937
Total	764,508[1]	895,350	1,469,508[1]	1,043,350

[1] Excluding 4,374 in Atabubu.

Sources: Based on data derived from Census 1891, pp. 9, 41; Census 1901, pp. 5, 19, 22.

THE EVOLUTION OF GHANA
AS A CENSUS UNIT
1851 _ 1960



MAP 4.1

It is not apparent to most impartial observers that the recorded population did not represent the true state of affairs as alleged by the report. Furthermore, the type of occupations, rhythm of life, and kind of habitation need not affect the accuracy of the enumeration. Again, the supposed underenumeration of the population was not more pronounced in the case of the females than males, seeing that the returns showed a very significant male deficit. (cf. Chapter 2).

The Census Report of 1891 specified the following reasons as causes of inaccurate population returns:

> "1. The great dread of the native population of all Census enumeration, founded on the belief - the outcome of experience when not under British rule - that all such enumerations were but the harbingers of taxation in some form or other.
>
> 2. The poverty of the materials at the disposal of the Committee for the collection of such data as could be obtained, and the physical difficulties to be met in collecting the necessary information, arising from the absence of convenient means of travelling and the scattered situations of the towns, villages and hamlets in the several Districts.
>
> 3. The large numbers of mechanics and labourers which were drafted from the Colony during the time of the Census operation - a drainage which had been going on for some time before also to supply the labour markets of the Oil Rivers, the Niger Protectorate, the Cameroons, Fernando Po, and, greatest of all, the Congo Free State". (Census, 1891, p. 8).

Emigration as such is not a cause of incorrect population counts, unless, incorrectness is intended to imply small or declining numbers. Thus, the Census Committee found nothing wrong in adding a total of 705,000 (or as much as 98 per cent. of the actual returns) to the total enumeration (Census, 1891, p. 9), that is, in almost doubling the recorded population. Kuczynski (1948, p. 393) thinks that those additions were unjustifiable. As he puts it:

> "The Secretary of the Census Committee was, no doubt, right in distrusting the accuracy of the returns from most districts, but since many figures were probably obtained by guessing, overstatements were probably on the whole about as frequent as understatements, and his scheme of making huge additions to the figures even of those districts where he regarded the returns,

for all practical purposes, as fairly accurate was certainly wrong. As regards Kwahu (Quahoo) and Krepi, he raised the total of 480,000 given in the Blue Books to 500,000, but both guesses were wide of the mark".

Notice again, that even the estimates given in the Blue Books of 1887, and 1889 (p. 1) had to be raised to conform to the prevailing thinking and practice.

Population Structure and Types of Schedules Used, 1891.

On the assumption that the enumeration was correct, the type of form used determined the qualities of the population inquired into. For the African population two main forms were used. Form 'A' was used to enumerate the African population in villages and small towns; Form 'B' was used in certain selected large towns (see Appendix I). In addition, three other forms were used. Form 'C' for non-Africans, asked for the names, relationship to head of household, religion, sex, marital condition, age, race, birthplace, nationality, occupation, industry, whether able to read, write, whether able to speak English, if suffering from serious infirmity, and nature of infirmity.

Form 'D' was intended for use of the various missions only, which had been asked to fill in certain specific information, e.g., name of town or village, children baptized, adult full members, adults under instruction, total membership, etc. Form 'E' asked for each inhabited house or compound: name of occupier, type of building etc. Notice that form 'B' was usually more elaborate than form 'A', and also the details required were not always the same.

The census returns suggested that there were over 15 per cent more females in the entire population than males, the male deficit being especially noticeable in the Wassaw, Saltpond and Ada Districts. Only in the Prampram district was there a clear male preponderance. In the

principal towns, however, the sexes were about numerically equal among both adults and children. This sex balance in the population in the urban areas appeared curious. On the other hand, if examined in perspective of the entire population, in which females were reported to be significantly superior to men in numbers, it suggests a differential increase in male population of the urban areas. The 'recent exodus of mechanics' from the country to foreign countries, e.g., the Cameroons, Fernando Po, and the Congo, was given as an explanation for the female preponderance. The number of such emigrants was not given, nor was any mention made of the number of immigrants into the country. If, as it was reported, the emigrants were mostly skilled men, then their number at that time was not likely to have been very large; by contrast the number of immigrants into Ghana comprised mostly of less skilled men and was likely to have been larger; therefore the male deficit on balance could not have been caused by the exodus of skilled males from the country. Again, if as it was alleged, the emigrants were mostly skilled men, then they were more likely to have emigrated with their wives than the predominantly non-skilled immigrants into the country from other parts of West Africa.

It was stated in the report that persons aged 12 years or less amounted to approximately 40 per cent of the entire enumeration. A population structure in which persons aged 12 years or less accounted for about 40 per cent of the population is not the characteristic of one in which massive emigration, especially of adult males, has taken place. Notice that in 1960, approximately 39.55 per cent of the total enumeration were aged 12 years or less (Census, 1960, Vol. 3). Furthermore, in 1891 the report noted a preponderance of 'students' in the towns, especially Accra; the explanation that the preponderance of juveniles

arose from the fact that many young men and women were in the large towns for formal education is inadequate. The problem may have arisen partly from the limitations of the forms used, or misunderstandings thereof, and preponderantly from age misstatements. For example, if in order to avoid tax payment, or prosecution in default thereof, a person had understated his age, it was an easy step to emphasize the statement by declaring that he was either a student, or an apprentice; and many house servants, male and female alike were likely to have been included in this large umbrella category called students. The preponderance of females enumerated in the entire population may have arisen preponderantly from a massive avoidance of enumeration; or from misstatements of ages by males who were in the taxable ages. For example, for Sefwi Wiawso, 11,000 males and 22,000 females were returned (Census, 1891, p. 90). No more need be said on this subject.

These problematic, if misleading, census returns arose mainly from the three main types of problems discussed in chapter four above; i.e., geographical, socio-demographic, and administrative factors (cf. Census, 1891, p. 9).

In his letter dated 22nd December, 1890, addressed to the chiefs (Census, 1891, pp. 77-78), Griffith held out, if unintended, hopes of some favours to chiefs who co-operated. Secondly, in those days Cowries were used as currency, so that when it was suggested in the letter that they could be used as counters, the notion was tantamount to a form of taxation. Poor persons could not afford them. Thirdly, the letter was addressed in English, and the majority of the chiefs and elders in the country were illiterate in English. Fourthly, the counters, cowries etc. were to be sent by couriers to the district commissioner at his

station, and without an escort; and cowries were currency! Fifthly cowries were to represent females and if some were stolen, the number of females as represented by the cowries would also diminish. Examine carefully the letter in question:

"King,

The Queen has expressed a wish to know how many subjects she has in the Gold Coast Protectorate, and has instructed you to obtain this information for her and send it to the District Commissioner.

2. I ask you, therefore, to number the people of all towns and villages in your country, and when you have done this to let the District Commissioner .... know how many males and how many females you have in your country.

3. I understand the way you count your people is to divide each town into companies, which are again subdivided into families. The heads of the families are then directed to drop into a calabash, or a similar article provided for the purpose a grain of corn or cowrie, according to the number of their people - and that these calabashes are then collected and their contents counted. You will, therefore, I know have no difficulty in doing what I ask you.

4. I wish you to clearly understand that I am not asking you to do this in order to tax your people, or for any purpose but your good. The government in requiring this information has no intention to tax you or interfere with your country and I only want the information to give to the Queen. As a loyal king you will, I am sure, help me. You will see that it is for your advantage that I should know how many people belong to your country in the same way a shepherd counts his sheep to know how many look to him for protection.

5. In thoseof your towns where you have Hausas living, you must not forget to include them in your numbers.

6. In order that you may be able to say how many males and how many females you have, I wish you to give instructions that when the numbering takes place different articles are used for each sex - that is to say, Indian corn for males, and Cowries or Kernels for females.

I am, King,
Your good Friend,
Brandford Griffith,
Governor."

(Census, 1891, p. 37; also Census, 1960, Vol. 5, pp 202-203).

Notice again that the nomenclature, Hausa is a misnomer, as it was intended in those days to include also all persons who came from the North, e.g. Wangaras, Grunshis, Moshis, etc. (Census, 1911, p. 38). The bulk of Hausas, in actual fact were from Northern Nigeria, although if the instruction were to have been interpreted on linguistic grounds, the language group would have covered an appreciably larger area.

The analogy of the sheep and the shepherd is interesting but has its limitations. The question is, does the shepherd look after the sheep for the good of the latter or of himself? Note the strong connection between 'protection' by the Crown and the Poll Tax Ordinance of 1852 (cf. Chapter 3).

Circulars, subsequently sent out instructed that Census Committees should be formed of chiefs, representatives of missions and trading firms and other educated persons from the local population. It was not clear whether the canvasser (i.e., enumerator) or the householder (i.e. self-enumeration) method was adopted in the urban areas; it was also not clear whether the population returned was '<u>de facto</u>' or '<u>de jure</u>'. It was considered inappropriate then to enact legislation which would give constitutional powers to the government to effect a census, although as early as 1811 one such bill had been passed for Sierra Leone. (Kuczynski, 1948, p. 9: footnote). The Census Committee considered it necessary to extend the census period from one day (a fact which would have made for simultaneity in enumeration), that is, 5th April, to six days, from April 13th to 18th (both dates inclusive). In actual fact, however, in some cases, e.g. Axim, the Census was taken before the period stated above, and in other cases, e.g. Cape Coast, Elmina, and Saltpond, the census was taken a very long time after those of the rest of the country.

CENSUS ENUMERATION, 1901

In 1901, the census enumeration covered the whole of the Colony, Ashanti (annexed in 1901), and the Northern Territories (annexed 1901). The total population recorded at the census was 1,338,433. Table 4.1 compares the returns for the various districts of the Colony. Notice that here again the estimated population was in every case higher than the recorded one, although under enumeration was about as frequent as over enumeration. For the country as a whole a total of 148,000 (amounting to 11 per cent of the total enumeration), was added. This was hardly surprising considering the prevailing mental attitude of the time. The same methods of counting, were used as 1891, but the cost of enumerating every 1,000 population was lower (i.e. 3s. 10d.), and also the returns furnished by the district commissioners were of poorer quality than in 1891, when the cost of enumeration was 6 shillings per 1,000 inhabitants.

The returns were considered inaccurate, and the usual reasons, e.g., inaccessibility of the bulk of the population, and native suspicion, were listed. Notice that unreliability at that time nearly always meant under-enumeration. And so the Committee in order to arrive at a 'more correct estimate of the population' made the additions noted above because in their view:

> "Particular towns, well known to members of the Committee, were found to be either over-, or under-estimated, in most cases the latter... Many villages refused to send Census returns to the District Commissioners, on the grounds that their king resided in another District. On the other hand some kings sent in returns of the number of their subjects, gathered not merely from their own but also from adjoining districts". (Census, 1901, pp. 4 - 5).

For example, the District Commissioner thought that owing to sickness in one case and heavy rains in another the enumerators were unable to complete the Denkyira portion of the Cape Coast District; but they made

rough estimates of the villages they were unable to visit (pp. 5 - 6). In spite of those estimates, he still considered that in the Denkyira District alone, an addition of 20,000 would still have been under the correct figure; again, so many carriers had been employed in the Cape Coast District that it was particularly difficult to estimate the population. The returns for the Axim and Saltpond Districts were thought to be under the correct figures, and in the latter district, an over-rating of the population in 1891 was suspected.

Notice the effects of inconvenient boundary demarkation together with its unfavourable political implications, and bad weather conditions on census returns. The administration failed to foresee such emergencies as sudden illness, etc., and to make provision for replacements. Although both under-enumeration and over-estimation had been suspected, corrections were made only for the former. The Census Committee found it impossible to take the census on the day suggested by the Secretary of State, and decided that it be taken in June instead. But anyone with even a casual knowledge of conditions in Ghana should have known that the month of June was the least propitious for taking censuses which entailed extensive field work, because June is the peak month of the main rains, for most of Southern Ghana. That decision was unfortunate; yet the Census Committee comprised people most acquainted with local conditions!

The returns for Ashanti were very inadequate and casual, and the report could rely only on those from Gaman and Wenchi areas, which accounted for only 7 per cent. of the total population of Ashanti; similarly, in the Northern Territories the population could not be enumerated in most districts, because of the alleged suspicion of the people, e.g. Dagarti and Frafra (Colonial Reports, Northern Territories of the Gold Coast, 1901, p. 11).

The number of carriers engaged for the census operations need not cause incorrect enumeration, as it should have been possible to know their number. Simultaneous enumeration was abandoned in practice. Furthermore, the Yaa Asantewa War of 1901 was not likely to enhance accuracy or completeness of enumeration.

Census Returns, 1911.

Table 2.1.1 gives the recorded population of the Gold Coast (then excluding Togoland), and its distribution by major administrative regions; Table 2.1.2 shows the computed average annual rate of change. Notice, for example, that whereas between 1891 and 1901, the average annual rate of population change in the Colony was approximately 1.6 per cent., the rate of change between 1901 and 1911 suggested an annual average loss of -0.5 per cent. For the entire country between 1901 and 1911 a population loss was recorded. Tables 4.2 and 4.3 show also the distribution of population densities per square mile. The Eastern and Central provinces of the Colony appeared to be the most densely populated regions; by contrast, the Northern Territories and Ashanti seemed the least peopled areas. The average density of population in the colony was almost twice the national average of just under 19 persons to the square mile.

In 1911 Census Report, (p. 55) gives for the population total of the Colony, the figure 852,396, as the total native population. The figure 852,666 entered in the Census Report of 1921, and subsequently adopted by the Census Report of 1960 (Vol. 5 p. 25), was 270 higher than the former. This error arose because the population of the Central Province of the Colony was by transposition of '3' and '0' entered by mistake as 247,306 instead of 247,036 (also Kuczynski, 1948, p. 414; p. 415; also Table 4.2). Table 4.4 gives the distribution of the African population according to the major administrative regions and districts.

Table 4.2

African Population by Region, 1911, Gold Coast Colony.

The Colony:	Males	Females	Total	Area sq. miles	Density
Western Prov.	87,989	75,551	163,540	9,723	16.8
Central Prov.	119,930	127,10[illegible]	247,036[1]	4,626	53.4
Eastern Prov.	219,361	222,462	441,820	9,986	44.2
Total	427,277	425,119	852,393[1]	24,335	35.0

Table 4.3

Total African Population, 1911, Gold Coast

Region	Males	Females	Total	Area sq. miles	Density
The Colony	427,277	425,119	852,396[1]	24,335	35.0
Ashanti	141,012	146,579	287,591	24,750	11.6
N. Territories	187,157	174,649	361,806	31,100	11.6
Total	755,446	746,347	1,501,793	80,185	18.7

Source: Census 1911.

[1] The figure of 852,666 given in the Report on the 1960 Population Census of Ghana (Vol 5, p. 27) is higher by 270. See Census Report 1911, appendix D, p. 58 ff. Also ibid., p. 143, footnote

As at previous censuses, several forms, 'A', 'B', 'C', 'D', and 'E' were used (Appendix I). These have already been described in the section on the Census of 1891; also their significance for the quality of census returns have already been discussed in Chapter 2. Practically, the same methods were used. In most areas, according to the report, the enumeration was taken by the 323 paid enumerators who were paid between five shillings and ten shillings depending on local conditions; besides, in several districts especially of the Central Province, services were given gratuitously; and in certain large towns and villages, the census was taken by the chiefs and elders. In Ashanti and the Northern Territories where social conditions were allegedly different, it was not possible to adopt the same procedures followed in the Colony - the chiefs in those regions being nearly all illiterate, the rate of literacy among the general public being generally negligible, and trading firms and missions had not yet been widely established; so that the census was taken under the personal supervision and often by the efforts of the District Commissioners and their staff in addition to their normal duties. Travelling supervisors and enumerators were appointed in the Western Province of the Colony to explain the census forms and assist the chiefs and headmen in the work of enumeration and in making out the returns. Eight enumerators of this category were engaged; Axim, Tarkwa, and Sekondi districts received one each; Ankobra district received two and the Western Frontier, three.

The passage quoted in the beginning of this chapter was taken from the Census Report for 1911. As the passage suggests, the Census Committee decided to discontinue on that occasion the questionable practice of making additions to the census returns. In 1891, the estimates were the mere impression of the Assistant Colonial Surgeon who

drafted the report; in 1901, they were the opinion of certain residents of Accra who formed the local committee (Census, 1911, p. 26). The report went on to explain:

> "Such additions, to be of any value should be estimated on a more trustworthy basis than mere personal impression, and, if they are to be made at all, should be assessed by those, who.. have acquired the local experience on which only a reliable estimate can be founded (ibid., p. 7)

It has been demonstrated in the section on the Census Report of 1901, that the judgement of the Census Committee could not be trusted. It is interesting to note that in spite of its pronouncements, the Census Committee of 1911 could not resist the temptation of making estimated additions to the population returns; yet their impressions were probably no more accurate than those of the previous committees.

For example, the Provincial Commissioner of the Western Province thought that the population in his province had been understated because the travelling enumerators had not carried out their duties with any degree of accuracy; also the usual suspicions and fears on the part of the public were partly blamed; the returns for the Birim District were considered disappointing; those from Ada were understated because the northern section of that district was not visited at all; the returns from Keta were considered inaccurate, because in 1901 the number of the population returned for that district was over 174,200 (see Table 4.1) but at the census of 1911 only 36,960 had been returned; the latter figure being almost the same as the one returned in 1891 when only estimates had been made for that district because political complications had not allowed the census to be taken. In Ashanti, the total population returned fell short of expectations; in the Northern Territories, the inaccuracy was attributed to apathy, the absence of unemployed educated natives, and the expense on account of the extent of territory

which had to be covered. The possibility of over-statements of the population in some districts did not at all occur to the Census Committee; rather there were suggestions that additions be made to the returns. For example, the Commissioner of the Southern Province of the Northern Territories recommended 2,000 to be added to the number given for the females aged between 6 and 15, in addition to the 15 per cent. recommended to be added to the total (Census, 1911, p. 31). Also, the District Commissioner for Keta suggested that a large addition should be made to the figures of that district. In the Eastern Province and Anamabo district, where the chiefs were 'most educated' and co-operative, the average annual rate of recorded population increase was between 3.2 and 3.7 per cent. i.e., about twice the average rate computed by the report; this high rate of population increase was most pronounced in the Krobo District of the Eastern Province in spite of the fact that a mass emigration from the Krobo and Shai areas into the cocoa areas of Akwapim and Birim Districts had been noted and commented upon!

Kuczynski (1948), appeared to think that there was a substantial under-enumeration in each of the major administrative regions (p. 413; p. 417), and suggested additions amounting to between 20 and 30 per cent. or more. As he put it:

> "If the estimate of the Commissioner of the Western Province for 1911 is correct that 'the returns fall short of the actual population of this Province by twenty per cent', and if the same assumption is made for the Eastern Province, the total population would have been about 1,000,000, but it is safe to say the population was larger than that. Probably exceeded 1,150,000" (p. 413).

He said also of other areas:

> "The returns for 1911 showed a native population of 1,501,793. The figures were apparently incomplete in every section of the country. Assuming that the omissions amounted to one fifth in the Western and Eastern Provinces of the Colony and Ashanti, and to one third in the North-Eastern Province of the Northern

Table 4.4

African Population by sex, 1911, Gold Coast

WESTERN PROVINCE	Males	Females	Total
Ankobra District	19,491	18,580	38,071
Axim District	14,698	14,027	28,725
Sekondi District	28,863	20,894	44,757
Tarkwa District	21,842	14,525	36,367
Western Frontier	8,095	7,525	15,620
Total Province	87,989	75,551	163,540
CENTRAL PROVINCE			
Cape Coast District	42,225	44,665	86,891
Saltpond District	45,256	47,778	93,034
Winneba District	32,449	34,662	67,111
Total Province	119,930	127,106	247,036[1]
EASTERN PROVINCE			
Accra District	36,546	36,501	73,047
Ada District	19,265	21,184	40,449
Akwapim District	43,439	44,608	88,047
Birim District	44,843	43,708	88,551
Keta District	18,025	18,920	36,945
Volta River District	57,240	57,541	114,781
Total Province	219,358	222,462	441,820
ASHANTI			
Central Province	69,755	75,720	145,475
Southern Province	23,774	21,863	45,637
Western Province	30,398	30,119	60,517
Northern Province	17,087	18,877	35,964
Total	141,012	146,579	287,591
NORTHERN TERRITORIES			
North Eastern Province:			
Gambaga District	6,906	6,948	13,854
Bawku District	9,223	9,480	18,703
Navrongo District	43,281	36,136	79,417
Zuarungu	25,577	25,921	51,498
Total	84,987	78,485	163,472
North Western Province:			
Wa District	33,707	31,177	64,884
Lawra District	26,601	24,958	51,559
Total	60,308	56,135	116,443

Source: Census, 1911.

Territories, the native population would have been about 1,800000. It was no doubt larger than that" (p. 417).

Compare Tables 4.2 and 4.3 for an appreciation of the additions suggested above. These suggestions should be taken with caution in view of the high probability of over-estimations occurring in some districts, e.g. Krobo and Anomabo Districts.

Sex and Age Structure of the African Population, 1911.

In the entire population an excess of about 9,000 males was recorded, there being 503 males to 497 females in every 1,000 population. Table 4.3 suggests that males predominated in the Colony and Northern Territories, and females predominated in Ashanti. For the country as a whole the massive female excess reported in 1901 was transformed into a deficit in 1911. A situation like that was very suspect. This is not to suggest that either the former or the latter returns were the more accurate or the less accurate. A further examination of the population structure according to districts (Table 4.2) suggests that in some places either the population number was understated, or ages were mistated, or both. Age mistatements, even if unintended, could be easy and frequent, because marriageable age was made the dividing line between adults and children. For example in the Central Province of the Colony, there was a substantial female excess (about 5,100) among persons aged 15 years or less; but among adults, there was an excess of 7,300 males. Immigration is inadequate to explain the sudden shifts in population structure.

It is more probable that adult females were returned as children because they were not married, or that the males of that age group were undercounted (Census, 1911, p. 30); in the Western Province males predominated among children, and females predominated among the adults; if migration were the cause, the reverse should be the case, seeing that the mines, etc., were located in that province.

If, however, a number of male adults were returned as children, or were omitted from enumeration; or if a number of female children were returned as adults, or were omitted from enumeration, such would be the case.

In Ashanti, males predominated among children; and females among adults; there being 108 females to 100 adult males; there is little in this to confirm the suggestion that more female babies are born than male (cf. Blanc, 1955).

In the Northern Territories there were fewer girls than boys in the cohorts aged 1 - 5 years, and 6 - 15 years; clearly the raids of Samory and Babatu which took place in 1896 or earlier could not have been the cause of male predominance among persons who had not yet been born (Census, 1911, p. 31).

In the North-Eastern Province of the Northern Territories, the recorded excess of males was attributed to the females being hidden from view for fear of taxation.

It is not clear whythe males who were more frequently the subject of taxation, should not also have been kept from view. Probable differential under enumeration would be more plausible.

It was also suggested that the male predominance arose from the higher mortality rates among women from cerebro-spinal meningitis (cf. Ministry of Health, 1953, p. 19; pp. 75 - 76).

Even assuming that more female deaths (in absolute terms) were recorded than male from that disease, that in itself could be a symptom of absolute female predominance in the entire population, and not a cause of male deficit. Appendix I gives also the ages according to which the population were returned.

Population Census, 1921.

The total population recorded in 1921 including, for the first time, Togoland, was 2,296,400. A brief history of the latter area has already been told in an earlier section. The apparent population increase between 1911 and 1921 was just over 40 per cent.; i.e. 3.5 per cent. per annum. Table 2.1.2 shows the distribution of population change for each administrative region. The Colony alone accourted for over 50 per cent. of the total population although it comprised only just over 25 per cent. of the land surface. Tables 4.5.1 to 4.5.8 show the area in square miles, population change and density per square mile for each of the four major administrative regions and districts thereof. Areas stated in the tables are estimates only, as most of the country had then not been surveyed or mapped, especially Ashanti and the Northern Territories.

The Eastern and Central Provinces of the Colony were the most densely peopled parts of the country. Ashanti and the Northern Territories as a whole were very sparsely populated. Note especially the very high rural population densities in Akwapim, Volta River and Keta-Ada Districts of the Eastern Province of the Colony; the Saltpond, Winneba and Cape Coast Districts of the Central Province; and the North Mamprussi District of the Northern Territories.

Contrast these with the low population densities in Sefwi and Aowin Districts of the Western Province of the Colony; Mampong, Ashanti Akim, Kintampo, and Ahafo-Goaso Districts of Ashanti; Western Gonja, Eastern Gonja, and Western Dagomba Districts of the Northern Territories; and the Kete-Krachi, Eastern Gonja, and Southern Mamprussi Districts of Togoland (cf. Hilton, 1960, p. 12).

Besides varying degrees of incomplete enumeration, boundary changes between districts hamper adequate comparison of population trends. In

Table 4.5.1

Eastern Province, African Population, 1921

District	Approx. area sq. mls.	Total Population 1921	1911	Density per sq. ml.	Population change %
Accra	560	99,603	73,047	177.86	36.5
Akwapim	840	79,917	88,047	95.13	- 9.3
Akim-Abuakwa	1,870	90,306	46,768	48.29	93.1
Kwahu	2,880	41,693	41,783	14.47	- 0.2
Volta River	1,200	175,063	114,781	145.88	52.5
Keta-Ada	2,060	177,625	77,394	86.22	22.9
Total	9,410	664,207	441,820	70.56	50.39

Note: In 1911, the area of the Eastern Province was estimated at 9,986 square miles with a population density of 44 per square mile. (Census, 1921, p. 49).

Source: Census, 1921, p. 49.

Table 4.5.2

Central Province of the Gold Coast Colony, African Population, 1921

District	Area in square miles.	African Population		Population per square mile, 1921	Percentage Population change
		1921	1911		
Cape Coast	1,800	93,427	86,891	51.90	7.5
Saltpond	805	71,468	93,034	88.78	-23.2
Winneba	910	105,567	67,111	116.0	57.3
Western Akim	1,090	32,164	-	29.50	-
Total	4,605	302,626	247,306	65.71	22.36

Source: Census, 1921.

Table 4.5.3

Western Province of the Gold Coast Colony, African Population, 1921

District	Area in square miles	African Population		Population per square mile, 1921	Percentage Population change
		1921	1911		
Sekondi	315	54,164	44,757	171.94	21.0
Tarkwa	1,680	44,525	36,367	26.50	22.0
Ankobra	2,100	33,053	38,072	15.73	-13.2
Sefwi	2,640	26,008	15,620	9.80	108.5
Aowin	1,200	6,571		5.57	
Axim	1,540	40,759	28,725	26.46	41.0
Total	9,475	205,080	163,540	21.64	25.4

Source: Census, 1921

some districts, the apparent increases in population resulted from more complete enumeration, while in others, a seeming population decline may have resulted either from omissions or from over enumeration at previous censuses, or from both causes.

Appendix I shows the characteristics of the population about which enquiries were made. Notice that the age grouping was slightly different from that of 1911. The usual five forms were used. The census which was to have taken place on 24th April, was by order in council 'postponed' and the public were informed that the Governor had authorised Census Officers in remote areas to take the Census between 24th March and 24th May in accordance with the Ordinance of 1920. In a strict sense, the afore-mentioned Ordinance only allowed the Governor in Council 'by order or proclamation to postpone until any later time the doing of any matter or thing required by this Ordinance' (Census, 1921). It made no allowance for advancement of the date, or for the extension of the period. As a result of those changes, the census in the various districts and regions were not taken simultaneously. The time lag in some cases was as much as three weeks. The implications of this time difference for simultaneous enumeration are clear.

The census appears to have been taken against considerable opposition and resentment from the administrative officers. The Acting Governor of the Gold Coast had suggested to the Secretary of State of the Colonies that the census of 1921 be postponed for about two or three years but the latter had insisted that it be taken, since it was desired to have a common census date for all parts of the Empire. This subject is discussed at considerable length in Chapters 3 and 4 of the 1921 Census Report. Suggestions were made to expand the scope of the census enumeration but

> "On the advice of the Honourable the Secretary for Native Affairs, Mr. Furley, C.M.G., O.B.E., it was decided not to attempt any elaboration or extension of the scope of the

> Census beyond the lines on which it was conducted in 1911 .... as the results of the 1921 Census would be more easily comparable with those of 1911 and will be of more value and interest if they are obtained by the same procedure"
>
> (ibid., p. 21)

In view of administrative antipathy to the census, evidence of which abounds in the report, it is hardly surprising that little thought appears to have been spared for the census. Furthermore, in discussing the quality of the census returns, the argument very often shifted to either population change through migration, or density, and entirely missed the point. For example, the low density of popultion in Kwahu and the high density in the Keta-Ada areas, according to the report, were expected, and so were assumed to be correct. But density whether high or low has little to do with the quality of the figures on which its computation is based. (ibid., p. 49).

Population Change in the Eastern Province of the Colony, 1921.

The rates of population increases recorded for Akim Abuakwa and Volta River Districts were probably too high, and may have been due to omissions at previous censuses. The large increase in Accra Municipal Council area was ascribed to growing urban population; but boundary changes which transferred parts of the old Akwapim district to the former area, may have played a large part (Table 4.5.1). The population decline in Akwapim was blamed on migration to richer lands in Akim Abuakwa, but the fact that the former district had been reduced in area was not allowed for.

Population change in the Central Province of the Colony, 1921.

The large population increase reported for Winneba districts resulted partly from boundary changes which transferred parts of the Western Akim District to it, and partly from more complete enumeration in 1921; the reported population loss of Saltpond resulted partly from

the boundary changes mentioned above, which transferred parts of its area to Western Akim and Winneba Districts (Table 4.5.2).

Population Change in the Western Province of the Colony, 1921

Here again boundary changes make comparisons difficult. For example, the Sefwi and Aowin Districts were carved out of the former Western and Ankobra Districts; from the latter district, not less than 26 villages with a total estimated population of 17,000 were transferred to the Sefwi District, which figure amounted to 68 per cent. of the total population recorded. Among the localities so transferred was the mining camp of Bibiani then estimated at some 10,000 persons, most of whom were immigrants from the Northern Territories, and also from outside Ghana. These changes may have accounted partly for the recorded population decline in the Ankobra district (Table 4.5.3). The District Commissioner attributed the sparse population of most of this area to difficulty of terrain, remotness, isolation, lack of economic development and absence of roads; also to an unhealthy environment. As he puts it:

> "The Aowin tribe is the smallest and one of the most unhealthy, I should imagine, in the Colony. Numbers of young men emigrate to the mining towns and other centres, unaccompanied by their women. When they return, with their savings, they are almost certainly infected with venereal disease. The Anglo-French boundary unfortunately runs through their tribal lands with the result that part of the tribe lives under the French and the remainder under the British Government" (Census, 1921, p. 85).

Tuberculosis, tropical ulcers, malaria, yellow fever, leprosy, etc., were listed as some of the prevalent diseases of the area, 'there being no medical officer stationed in that area for the past ten years' (loc. cit). Kwame Nkrumah (1957, p. 13) in his Autobiography delineated a very vivid picture of the difficult conditions in that part of the country where he spent his childhood (p. 3). His father had died in

1926 of a tropical ulcer. Difficult environments of the type shown above were not likely to facilitate census enumeration.

Population Distribution and Changes in the Ashanti, 1921.

What with the very fundamental and confusing boundary alterations, the abolition of old districts, the creation of new ones in their place, and above all, the absence of base maps which the administrative officers complained so much about, a comparison of the census returns of 1921 with the previous ones would be misleading and inappropriate. For example, at the time of the 1911 Census there were only five districts in Ashanti, but in 1921 there were two main administrative provinces made up of nine districts; not mentioning the numerous changes that took place in the administration of local councils. The general complaint of the officers was that the census returns were not reliable. Compare Tables 4.5.4 and 4.5.5 with Table 4.4. Notice that in general population densities were higher in the forest zones of the southern and central parts of Ashanti and lower in the eastern, northern and western margins (Hilton, 1960, p.12).

The main towns and villages were Kumasi (pop. 23,690), Obuasi (3,900), Atabubu (2,270), Mampong (2,270), and Ejura (2,030). The administrative report cited the following increases (Table 4.4) in population during the decade 1911-1921:

Table 4.5.4

Population Increases in Main Towns in Ashanti, 1921.

District (Divisions)	Population Increase
Kumasi (excluding Town)	42,844
Juaben	3,582
Mampong	12,788
Adansi	5,409
Bekwai	7,763
Kokofu	4,752
Ahafo	3,327
Takyiman	3,640
Wenchi	3,200
Jaman	5,640
Berekum	9,546
Wam	5,373

Source: Census, 1921.

Table 4.5.5

Eastern Province of Ashanti: African Population, 1921

District	Population	Persons per sq.ml.
Kumasi Town	23,694	)54.62
Kumasi District (Excluding Town)	125,420	)
Mampong	47,491	11.9
Obuasi	66,082	26.9
Ashanti Akim	29,757	7.0
Total Province	292,444	21.7

Source: Census, 1921

Table 4.5.6

Western Province of Ashanti: African Population, 1921.

District	Population	Persons per sq. ml.
Kintampo	28,782	5.73
Wenchi	39,039	18.24
Sunyani	36,672	18.06
Ahafo Goaso	9,256	4.87
Total, Western Province	113,749	10.25
Total Ashanti	406,193	16.53

Source: Census, 1921

Both Nkoranza and Mo Divisions made losses; on the whole Ashanti gained over 40 per cent. during the decade, and this was attributed to heavy net immigration from the Northern Territories. For the first time more males than females were returned at the census; the absolute male excess being 5,567, amounting to a sex ratio of 102 males to 100 females. A further analysis shows that in the Eastern Province of Ashanti, the native women outnumbered the men by over 3,100; among the immigrant population from the Northern Territories, men outnumbered the women by about 4,500; among the immigrants aged 16 - 44 years the men outnumbered the women by over 3,600 and, that age group accounted for approximately two-thirds of the total male excess of that population; whereas in 1911 only 31,000 immigrants from the Northern Territories were returned (Census, 1911, pp. 30 - 31); in 1921 over 44,000 or an increase of 42 per cent. were recorded; if, however, the 3,500 workers on the railroads were included, the total number of immigrants amounted to about 47,500, representing an increase of 16,000 or 52 per cent. (Census, 1921, p. 95; pp. 116 - 119). Census returns for 1911 were very incomplete, and so the recorded increase in population may not all have resulted from immigration; most of it may have been the result of more complete, if unreliable, enumeration. Even so, an analysis of the 1921 returns suggests that the returns were still very incomplete. Notice also that not every immigrant came from the Northern Territories as stated in the report (Census, 1921, p. 95), since as already noted, the method of classification of population by tribe and origin was very unsatisfactory.

Population in the Northern Territories, 1921.

The Northern Territories reported a population increase of 45.5 per cent., making it the fastest growing region in the country for that

decade. Again these returns are suspect. See Table 4.5.8 and 4.5.9. The large increases (of more than 70 per cent.) returned for Western Gonja and Northern Mamprusi were probably due to more complete enumeration; yet the probability of the addition of population not actually enumerated could not be ruled out; in 1911 only two-thirds of the Northern Territories were enumerated and the most densely peopled parts, e.g., Frafra, Kusasi, Builsa, Kassena-Nankanni were not visited at all; for example, the North Mamprussi District, which comprised most of the aforementioned areas, consisted of only 10 per cent. of the area of the Northern Territories, but accounted for no less than 63 per cent. of its total enumeration. Contrast these with the sparsely peopled areas which form most of the Northern Territories, e.g., Western Gonja, Eastern Gonja (Tables 4.5.8; 4.5.9); the recorded population loss in Wa District was probably due to more careful enumeration.

To confirm that there had been substantial increases in the population because of increased 'peace and trade' (cf. Census, 1911, p. 46) the following towns were cited as having grown:

Table 4.5.7

Population Changes, Northern Territories, 1911 and 1921

Town	Population	
	1921	1911
Tamale	3,901	2,138
Salaga	3,207	2,059
Yeji	3,888	no record
Gambaga	1,027	1,567
Lawra	1,372	1,050
Wa	2,810	no record
Bawku	7,710	no record
Zuarungu	7,295	no record
Navrongo	14,798	no record

Source: Based on data derived from Census, 1911; Census, 1921.

Table 4.5.8

Southern Province of the Northern Territories: African Population, 1921.

District	Area in square miles	African Population 1921	African Population 1911	Persons per square mile 1921	Percentage change 1911-1921
Western Dagomba	4,690	93,944	63,976		46.8
Eastern Dagomba	4,060	18,152	10,328		76.0
Western Gonja	9,060	10,934	7,587		44.0
Total	17,810	123,030	81,891		50.2

Source: Census, 1921, p. 128.

Table 4.5.9

Northern Province of Northern Territories: African Population, 1921.

District	Area in square miles	African Population 1921	African Population 1911	Persons per square mile 1921	Percentage change 1911-1921
Wa	3,540	43,168	64,884		-33.0
Lawra	3,820	84,264	51,559		63.4
N. Mamprussi	3,330	257,949	149,618		72.4
S. Manprussi	2,100	21,944	13,854		58.3
Total	12,790	407,325	279,915		45.5
N. Territories Total	30,600	530,355	361,806		45.5

Source: Census, 1921, p. 128

Notice that the largest and most substantial of the alleged increases were reported for towns located in those very areas of the North-Eastern Province of the Northern Territories which were not enumerated in the 1911 census e.g., Navrongo, Zuarungu, Bawku, Gambaga; therefore the allegation that the population had increased because of peace and increased trade could not be sustained: there were no records of them. The larger populations returned for Tamale and Lawra were ascribed to their growing importance as trade and administrative centres. Bolgatanga, also in the densely peopled district of the north-east, with a population about three times that of Tamale was not returned as a principal town or village; although Gambaga was claimed to have gained substantially in population during the decade, an analysis of the data shows that on the contrary it sustained an absolute decrease from about 1,567 to 1,027, a loss amounting to about 35 per cent. (Table 4.5.7). This is not to suggest that either figure was any more reliable than the other it is meant to emphasize that in using these census returns no amount of caution can probably be too much. Besides the usual problems discussed in Chapter 2, the fact that the territorial limits of the Northern Territories as a region were imprecise, vis à vis, the surrounding French Territories - was not likely to enhance accuracy of enumeration (Census, 1921, pp. 130-133). Yet in spite of the reported heavy net emigration from the Northern Territories to Ashanti and other parts of the country, particularly of males, the high cerebro-spinal case - mortality rates among females, and above all, the "effects of the raids of Samory and Babatu," the Census Committee found nothing curious in the fact that population returns for this region suggested the highest growth rate in the country!

Population in Togoland, 1921.

An examination of the data suggests that it was one of the most sparsely peopled parts of Ghana; nonetheless, its southern parts, i.e. Ho and Kpandu Districts, and its northern parts, i.e., Mamprussi District had more than twice the average regional population density, and although they comprised only 20 per cent. of the surface area, they accounted for over 50 per cent. of the total population; by contrast, the middle parts, e.g., Kete-Krachi, and Eastern Dagomba, included some of the most vacant lands of Ghana (cf. Hilton, 1960, p. 12). Being the first census taken under the British administration, its results could not easily be compared with those obtained under the German administration, because their concepts, approaches, methods of counting, classification of data, and administration of censuses were so utterly different. Efforts to draw out trends from German sources were therefore not successful (Census, 1921). The census report concluded from the data that there had been a very serious and widespread depopulation in the region, because of the usual tropical diseases, e.g. tropical ulcers, syphillis, venereal diseases. To emphasize the matter further, it was alleged that the proportion of adults aged 16 - 46 years had diminished, because of the epidemic of influenza which occurred in 1918, and "which took a heavier toll of persons of both sexes between 16 and 30 years of age who suffered most". Yet the influenza affected other parts of Ghana as well.

When between 1950 and 1955 my father and I made extensive tours of that region, including areas on either side of the Volta, we were impressed by the widespread presence of tropical ulcers, syphillis, etc., as well as dietary deficiencies. Yet it is still not clear why just across the border on the Ghanaian side, large increases of population were reported.

Age and Sex Structure of the Population in Togoland, 1921.

At the census the population was returned merely as boys, girls, men and women; ages were not defined in years; this meant that the decision as to age and sex differentiation was taken mostly on subjective grounds. Yet from such unsatisfactory data, the conclusion was drawn that children had increased in number whilst adults had diminished. The war (1914-18) was not mentioned as a probable cause of the adult deficiency, and the explanation that the latter resulted from differential mortality rates from disease is misleading. An analysis of the data would suggest that age mistatements, or misjudgements were probably major causes of that curious age structure.

If the ages of adults were understated; or if many adults were omitted from enumeration; or made themselves scarce, the population returns would show a false deficit of adults; their exclusion from the census returns could give an appearance of both depopulation and a relative increase in the proportion of children.

During the visits already referred to (1950 - 55), we found that in the predominantly rural communities, children predominantly, and the very old and infirm, were often left behind in the settlements whilst the able-bodied adults were out in the fields during daylight. Almost invariably, we had to wait for hours in the towns before 'personable' adults could be brought in.

In 1955 when I participated in a survey project on rural activities in the Ho and Kpandu Districts the pattern of life was one in which the settlements were left almost empty of population, especially adult, between sunrise and sunset, and buzzed with life at night.

On market days most settlements were left with less than 10 per cent.

of their normal night-time population; because, for most people in those almost closed communities market days were also great social occasions, including the search for spouses, and people went not only to buy or sell, but most went merely to look; and as the journeys were made mostly by foot, they were most frequently undertaken by the able-bodied inhabitants, especially those aged between 15 and 50 years.

And so any one who undertook a census of the population, in the casual manner which characterized the censuses of this period (1891 - 1948), was most likely to get a false impression of empty settlements.

Not infrequently, the geographer is required to explain population changes in this or that region; or during certain periods, as judged from census returns and other sources; the implication being usually that heavy net migration of some sort had taken place. If he examined also the structure of the population, and the circumstances in which the censuses were taken, he might discover, as in this example, that after all, there was not much to explain, and so avoid giving explanation of doubtful validity.

CHAPTER 5

POPULATION CENSUS RETURNS FROM 1931 to 1948

The returns of the 1931 Census of Population were published in a two-tome work called The Gold Coast, 1931. The first volume (by A.W. Cardinall, 1932) discussed a wide range of subjects including historical, economic, sociological, anthropological and cultural matters, besides presenting an interpretation of the data obtained from the census. It is a very valuable document. The second volume contained the statistical material returned at the census. The total African population returned was 3,160,386 for the entire country (including mandated Togoland). Hilton's table (1960, Table 1, p.22) is ambiguous and suggests that the total of 293,671 returned for mandated Togoland was excluded from the overall figure.

Table 2.1.1 shows the population recorded for 1931 by major administrative regions; Table 2.1.2 gives the derived average rate of change per year between 1921 and 1931. Notice that the total decennial change was 37.6 per cent., and worked out at approximately 3.2 per cent. per annum and not 3.76 as suggested by previous investigators and census analysts. The reasons for this error of interpretation have already been demonstrated.

The reported rate of growth was highest in mandated Togoland (4.6 per cent. per annum), and Ashanti (including Brong-Ahafo Region, 3.6 per cent. per annum). Table 5.1 gives the areas in square miles, the number of persons per square mile, the total population for the administrative districts, etc.

An analysis of the table shows that with almost twice the average

Table 5.1
Population Returns and Density, Gold Coast and Togoland, 1931[1]

District	Area in sq.mls.	Africans	Non-Africans	Total	Population per sq.mi.
Colony					
Western Province					
Ankobra	2,149	46,173	46	46,219	21.5
Awowin	1,272	9,941	2	9,943	7.8
Axim	1,518	51,924	28	51,952	34.2
Sefwi	2,610	42,060	18	42,078	16.1
Sekondi-Dixcove	367	72,821	435	74,256	202.3
Tarkwa	1,683	60,983	155	61,138	36.3
Total Western Province	9,599	284,902	684	285,588	29.8
Central Province					
Cape Coast	2,125	116,044	120	131,164	64.1
Saltpond	690	103,265	48	103,313	149.7
Western Akim	951	63,381	37	63,418	66.7
Winneba	917	128,694	93	128,785	140.4
Total Central Province	4,683	431,384	298	431,682	92.2
Eastern Province					
Accra	618	136,696	1,001	137,705	222.8
Akwapim	834	86,380	44	86,424	103.6
Birim(Akim-Abk)	(1,867	140,677	72	140,349	75.4
Birim(Kwahu)	(2,880	59,026	17	59,043	20.5
Keta-Ada	2,146	243,671	47	243,718	113.6
New Juaben	52	26,526	105	26,631	512.1
Volta River	1,258	162,100	28	162,128	128.9
Total Eastern Province	9,655	855,076	1,322	856,398	88.7
A S H A N T I					
Western Province					
Ahafo	1,434	15,776	-	15,776	11.0
Kintampo	5,141	43,410	8	43,418	8.4
Sunyani	2,416	66,976	21	66,997	27.7
Wenchi	2,077	58,106	5	58,111	28.0
Total	11,068	184,268	34	184,302	16.7

Eastern Province					
Ashanti-Akim	4,580	55,235	20	55,255	12.0
Kumasi	3,169	172,196	457	178,653	54.5
Mampong	3,349	50,295	10	50,305	15.0
Obuasi	(1,046	39,718	87	39,805)	38.5
Obuasi-Bekwai	(1,167	76,366	16	76,382)	65.5.
Total	13,311	393,810	590	394,400	29.6
Total Ashanti	24,379	578,078	624	578,702	
		Northern Territories			
Northern Province					
Kusasi	807	110,614	3	110,617	137.1
Lawra-Tumu	3,840	93,125	8	93,133	24.3
Mamprusi	2,014	46,523	3	46,526	23.1
Navrongo	1,551	120,870	20	120,890	77.9
Wa	3,462	72,323	6	72,329	20.9
Zuarungu	781	133,981	9	133,990	171.6
Total	12,455	577,436	49	577,485	46.4
Southern Province					
Western Dagomba	6,754	100,433	50	100,483	14.9
Eastern Gonja	5,053	23,683	7	23,690	4.7
Western Gonja	6,224	15,723	1	15,724	2.5
Total	18,031	139,839	58	139,897	7.8
Total, Gold Coast Colony					65.7
		T O G O L A N D			
Northern Togoland					
Eastern Dagomba	5,503	91,523	4	91,527	16.6
Kete-Krachi	3,949	20,521	2	30,523	5.2
Kusasi	420	41,101	-	41,101	97.9
Mamprusi	705	14,997	-	14,997	21.3
Total	10,577	168,142	6	168,148	15.9
Southern Togoland	2,464	125,529	37	125,566	51.0
		S U M M A R Y			
The Colony	23,939	1,571,362	2,304	1,573,666	65.7
Ashanti	24,379	578,078	624	578,702	23.7
Northern Territories	30,486	717,275	107	717,382	23.5
Togoland	13,041	293,671	43	293,714	22.5
Gold Coast & Togoland	91,843	3,160,386	3,078	3,163,464	34.4

Source: Based on data derived from The Gold Coast, 1931, Vol.2, pp.2-3.

density of population per square mile, the Gold Coast Colony was the most densely peopled region (66 persons per square mile); and although it comprised only a quarter of the surface area of Ghana, it accounted for approximately half of the entire enumeration of the country. By contrast, mandated Togoland, with approximately 15 per cent. of the area, accounted for only 9 per cent. of the overall population. Notice the very high rural population densities in Saltpond, Winneba, Akwapim, Keta-Ada, Volta River, Kusasi and Zuarungu Districts with over 100 persons to the square mile (see Hilton, 1960, p.12, Figs.5 and 8); contrast the foregoing districts with the very sparsely populated areas of Kete-Krachi, Eastern and Western Gonja, Kintampo, Aowin, etc. Notice the contiguousness of at least the first four of these districts, and also that they are located in the Voltaian Basin (see Hilton, 1960, p.10, Fig.4). Also the relationship between physical factors and population densities (cf. Chapter 1, Map 1.1).

The Problems of Assessing Population Changes between 1921 and 1931

Tables 5.2.1 to 5.2.6 show the reported population increases within each administrative region or province. Notice the high increases in Akwapim, New Juaben, Birim (Akim Abuakwa), Sefwi, Bekwai, Wenchi-Sunyani, and Manprussi Districts. Most of these returns were of course suspect. Contrast them with the low increases of below average values in Accra, Manpong Districts, etc., and the absolute losses of population in Volta River and Krachi Districts; note that the last two districts are in the Voltanian Basin, the former being south of the Volta Gorge, and the latter being north of it (see Hilton, 1960, p.4, Fig.1). Subject to the caution given elsewhere, notice that he operates on

Table 5.2.1
Western Province of the Colony: Population Change, 1921-1931

District	Percentage Increase
Ankobra	39.6
Aowin	51.2
Axim	27.4
Sefwi	61.7
Sekondi-Dixcove	36.3
Tarkwa	37.0
Total, Province	38.8

Source: Based on data derived from Census, 1931, Vol. 2 pp. 2 - 3; p. 23.

Table 5.2.2
Central Province of the Colony: Population Change, 1921-1931

District	Percentage Increase
Cape Coast	45.62
Saltpond	44.49
Western Akim	97.0
Winneba	21.9
Total, Province	42.54.

Source: Based on data derived from Census, 1931, Vol. 2, pp. 2 - 3; p. 23.

Table 5.2.3
Eastern Province of the Colony: Population Change, 1921-1931

District	Population change Percentage
Accra	37.2
Akwapim	8.0
Birim (Akim Abuakwa)	55.8
Birim (Kwahu)	41.6
Keta-Ada	37.2
New Juaben	(81.3)
Volta River	-7.4
Total, Province	28.7

Source: Based on data derived from Census, 1931, Vol. 2, pp. 2 - 3; p. 23.

Table 5.2.4

Population in selected Towns in the Eastern Province, 1921 - 1931

Town	1911	1931
Adawso	1,900	500
Adukrom	6,000	1,700
Akropong	6,200	1,200
Dsodse	8,600	5,600
Effiduase	2,050	600
Larte	6,500	4,100
Obo	10,000	3,800
Otwidurase	4,300	950
Manyakpowunor	5,100	1,400
Teshi	10,700	7,600

Source: Based on data derived from Census, 1911, 1931.

Table 5.2.5

Population Gains in Towns in the Eastern Province, 1911 - 1931

Town	1911	1931
Accra	19,000	38,000
Asamankese	3,300	5,400
Keta	3,600	9,800
Koforidua	3,800	5,300
Mangoase	790	3,000
Old Tafe	1,200	3,300
Pakro	320	1,143

Source: Based on data derived from Census, 1911, 1931.

Table 5.2.6
Ashanti, Western and Eastern Provinces,
Population Change, 1921 - 1931.

District	Population change
Western Province	
Ahafo	70.4
Kintampo	50.8
Sunyani	82.7
Wenchi	48.8
Total, Province	62.0
Eastern Province	
Ashanti Akim	85.6
Kumasi	15.5
Mampong	5.9
Obuasi	75.0
Obuasi (Bekwai)	
Total, Province	34.0
Total, Ashanti	42.0

Source: Based on data from Census, 1921,1931.

Table 5.2.7.

Northern Territories (including Togoland part):
Population Growth, 1921-1931

District	Per cent. change
Dagomba	25.9
Gonja	33.8
Krachi	33.7
Mamprussi	57.9
Wa	29.8

Source: Based on data derived from Census 1931.

arithmetic average annual rate of change.

It is doubtful whether maps should be based on annual averages rather than on decennial rates, since the unit of time for most censuses is normally ten years, or the intervening period between two censuses.

Save for minor modifications, the same five types of census forms were used for the enumeration (Appendix I). The question on religion was omitted from form 'A', and that on education specified the minimum number of years of education, which itself may have reflected a general increase in the incidence of education. Notice also the changes in age-groupings. For example, whereas in 1921 the rural population was divided into four groups, in 1931 it was divided into three only. Notice the corresponding changes with respect to the urban population; also, in 1921 young adults were defined as those aged from 16 to 45 years, but in 1931 they were defined as those aged from 15 to 45 years. Assuming correct returns, this latter change could leave the false impression that there was an increase in the number of young adults between 1921 and 1931 and a decline in the number of children. Hence any comparison between the two returns should be made with extreme caution.

Boundary Changes as a Source of Difficulty

An analysis of the census returns by districts shows that most of the returns were unreliable. The reasons for incorrect enumeration have already been discussed in chapter 2. For example, the very high rates of change reported for Togoland were probably the result of better counting, and reflect also a large amount of under-enumeration at the previous census (cf. Chapter 4). Boundary changes make comparisons

difficult. For example, whereas in 1921 there were 7 districts in the Northern Territories, in 1931 there were 9; five of which were entirely new, whilst 3 of the former districts were abolished. Again, in Ashanti, 3 of the 9 districts of 1921 were superseded in 1931 by new ones; in the Eastern Province of the Colony, three of the 1921 districts were replaced by four new ones; even when old districts were retained, their geographical areas sometimes differed, as for example, the districts of Accra, Volta River, Cape Coast, Saltpond, Western Dagomba, Eastern and Western Gonja. The areas of Accra, Cape Coast, and Western Dagomba Districts in 1921 were 560, 1800 and 4690 square miles respectively; in 1931 their areas were 618, 2125 and 6754 square miles respectively. Assuming that the same correct population was returned at each census, territorial changes of the type shown above were bound to make direct comparison extremely difficult. Even the boundaries of the major administrative regions or provinces into which the country was divided were not free from these boundary changes. Between 1921 and 1931 both the Dunkwa and Denkyira Districts were transferred from the Western Province of the Colony to the Central Province; Akim Swedru and Achiase Districts were similarly transferred from the Central Province to the Eastern Province of the Colony.

Opinions of Census Officers as to the Quality of the Census Returns

As the majority of the census officers thought that there had been under-enumeration amounting to between 2 and 10 per cent., it is curious that at the same time an excess of population amounting to about 290,000 was alleged, and accounted for partly by the tendency on the part of chiefs to inflate their numbers (Cardinall, 1932,

Vol.1, p.124), and partly by immigration. But a large measure of this discrepancy probably arose from the assumption that in the circumstances of the times, the decennial rate of population increase "ought to be" 15 per cent., and so the probability that the rate of increase could be higher was not considered. As Cardinall (1932, Vol. 1, pp.146-47) put it:

> "If one reckons an error of 5 per cent. under-enumeration in the 1921 figures, the total population could have been expected to have amounted to 2,872,903 leaving a balance of 287,483 to be accounted for by immigration. By this method of calculation an increase of approximately 25 per cent. of the indigenous population returned in 1921 could have been anticipated."

Kuczynski (p.531) disagreed. He argued, on the contrary, that on the basis of Cardinall's reasoning, the balance of population to be accounted for by immigration was 387,483 and not 287,483; and that at the same time 189,217 of these were already in the country before 1921 and so would already have been included in the 1921 returns; so the abount of net immigration was about 200,000; he also assumed an under-enumeration of 12 per cent. in 1921 and concluded that the population increased by 23 per cent. What Kuczynski seemed to have overlooked was that the enumeration of immigrants in both 1921 and 1931 was unsatisfactory, and as demonstrated before, the names of ethnic groups were imprecise. In the circumstances it is not clear why he considered 12 per cent. under-enumeration more reasonable that another figure, say, 10 or 20 per cent.; or why a net immigration of 200,000 seemed more reasonable than, say, 100,00 or 300,000.

Population Change in the Western Province of the Colony, 1921-1931

Table 5.2.1 below shows that the highest rates of increase were reported for the Sefwi and Aowin, and the lowest for Axim District. The large increases were attributed to the development of the cocoa industry, improvement in transportation facilities, immigration, mining activities in the Tarkwa District, and the development of Tarkoradi Harbour (Cardinall, 1932, Vol.1, pp.147-154). It is curious that the districts then of most active development, e.g., Sekondi and Tarkwa, did not appear to have made the best showing. Most of the increases were only apparent and were the result of more accurate counting.

Population Growth in the Central Province of the Colony, 1921-1931

The average increase of population in the Central Province was 20 per cent. higher than the average for the entire country, and was attributed partly to the prosperous years that followed 1921 and partly to better enumeration (Cardinall, 1932, Vol.1), and partly to boundary changes. The very exceptional increases in Western Akim District were ascribed to the introduction of new roads and the development of the Central Province Railway which gave new impetus to cocoa farming; mining activities in Kokotenten, etc., and to the influx of strangers (Table 5.2.2). The below average increase reported for Winneba was probably due to boundary changes and also to under-enumeration, especially of male adults aged from 15 to 45 years

The increases in Cape Coast were explained by the expansion of the cocoa industry, the opening up of its northern section by the Central Province Railway, and an increase in the number of children who

came from other districts for education in Cape Coast town. Nonetheless, an average annual population increase of more than 3 per cent. in a predominantly rural district like Cape Coast would be unlikely without causing grave social strains. Apart from better enumeration, most of the reported increase was the result of the transfer of Western Akim, Dunkwa and Denkyira Districts to this province.

Population Change, Eastern Province of the Colony, 1921-1931

The Eastern Province showed the lowest recorded increase of population during the decade 1921 to 1931. Table 5.2.3 shows that the Birim (Akim Abukwa) and Birim (Kwahu) Districts reported very large increases which were attributed to expansion in the cocoa industry, development of towns along the railway, the opening of diamond mines, and immigration (Cardinall, 1932, Vol.1, p.149). The low increases in Akwapim District, etc., and the decline in the Volta River District were attributed to emigration from the south-eastern part of the country, including Akwapim, to the cocoa lands of the Birim Basin.

Notice the predominance of Akwapim, Krobo, Ewe and Ga towns in Table 5.2.4. Koforidua, Mangoase, and Pakro are along the railway line; Asamankese and Old Tafo are both in the cocoa-producing zone, the former also being associated with mining activities.

Whilst towns in the Krobo, Akwapim, Ga and Ewe districts diminished in population a large number of Akwapim, Ga, and Ewe villages grew in the Birim (Akim-Abuakwa) District; e.g., Adeiso, Coal Tar, Pakro, Asamankese, Mangoase, Bosuso. New Tafo, which made its humble début only after 1911, had by 1948 become a substantial town, overshadowing Old Tafo.

In Cardinall's view the remarkable thing during the decade was not the increase in the sizes of towns as such, but in the number of towns with a population of 1,000 and over (Vol.1, p.149). The gains in population of Accra, Keta and Koforidua were partly the result of rural-urban migration.

An examination of the age and sex structure of the population suggests that the population loss in the Volta River District was partly due to emigration, and partly due to the fact that some of the land of the unit was incorporated into the newly-formed New Juaben District. The creation of the last-named district was also a factor in the small increases returned for Akwapim.

The foregoing discussions relate to internal population shifts within the Eastern Province only, but they do not explain the fact that this Province returned the lowest population gain during the decade. Net emigration from this Province was improbable in view of the pace of local economic growth. Probably, in view of the rapid rate at which new towns were being formed, and the high population mobility thus generated, most of the population were omitted from enumeration; but it is partly also due to the transfer of the West Akim District from this Province to the Central Province, which involved a population loss amounting to between 60,000 and 70,000 people.

Population Growth, Ashanti, 1921-1931

Population gain reported for Ashanti was higher than the national average for the 1921 to 1931 decade (see Table 5.2.6). Notice the very large increases reported for Ahafo, Kintampo, Sunyani in the Western Province, and for Ashanti Akim and Obuasi (Bekwai) districts

in the Eastern Province. Boundary changes again render strict comparison very difficult. Net immigration from the Northern Territories was offered as a cause of the rapid decennial population growth. An analysis of the population structure reveals that the male ratio increased, the male adults gaining about 68 per cent. and female adults gaining about 56 per cent. in Western Ashanti. Contrast these figures with the average gain for the Province of 62 per cent. The male ratio in the rural areas was 108, and in the urban areas 168, per 100 females. In the Eastern Province, where immigration appeared to have been less, and population growth was only 34 per cent., the male adults gained 40 per cent. and the female gained 35 per cent. In Ashanti as a whole, the males gained 48 per cent., whilst the females gained 41 per cent. Assuming correct enumeration these data suggest that in general the male population increased faster than the female one. Cocoa farming and development in transportation, constructional works (e.g., the building of roads), were suggested as causes of the immigration. However, much of the growth recorded was again the result of more reliable enumeration.

Northern Territories, Population Change, 1921 to 1931

The population growth reported for the Northern Territories was higher than the national average (Table 5.2.7). Notice the large increase reported for Mamprussi, and the absolute loss reported for Krachi. Boundary changes made for the usual complications. Net immigration was considered to be an important cause of the rapid population growth. In explaining the reasons for the massive immigration from neighbouring countries, Cardinall (1932, Vol.1, p.152)

considered dessication as an important factor. As he put it:

> "The movement has been attributed to political and administrative causes, but it is far more likely that behind the human movement southward there is some unknown force which is visibly compelling the fauna of the French Sudan into the Protectorate and adjacent areas. Possibly the rate of dessication is progressing owing to the intensive attacks of the dry winds from the Sahara, the soil becoming less productive. Both factors are important. But the movement is well defined and is markedly so among the larger animals. It might be urged that the Africans of the Western Sudan regard Ashanti and Kumasi in particular as El Dorado, the Mecca of the man who wishes to get rich quick. To a certain extent this is true but it cannot alone account for the settlement of strangers all over the country not only in the pleasant easy land of the South but also in the hard and difficult areas of the north."

Needless to say, the dessication theory has not been confirmed. However, the population increases were reported to be particularly large along the Northern Frontiers. In 1921 the Northern Mamprussi Administrative District comprised Kassena-Nankani, Frafra, and Kusasi local councils. It returned a population of 258,000, and t en years later it returned 365,000, or a 41 per cent. increase. The district was reported to be overpopulated, and this population was held to have spilled over to the relatively empty lands of South Mamprussi, which registered an increase of 112 per cent. The conclusion was misleading because it did not take account of the important boundary changes which involved large populations (cf. Table 5.2.2 Western Akim District). It is strange that the Northern Territories should report such high population increases in spite of the fact that they had suffered so much emigration to Southern Ghana, the latter region having recorded less growth in spite of the large number of immigrants received from the former. A further analysis of the population structure suggests

that during the decade the male population increased faster than the female. However, in the Northern Province of the Northern Territories the number of females increased faster than that of males; the implication being that the dispersion (emigration) zone was located in the extreme north of the Northern Territories, and that some of the migrants only went to other parts of the Northern Territories, especially its Southern Province.

However, the total male predominance may itself be misleading. It is probable that the population was over-estimated in most areas. The tendency on the part of some Northern Chiefs to associate glory and power with large numbers has been noted. Power derives more from the number of males than of females. If among the predominantly patriarchal societies of the Northern Territories there was any inducement to inflate population numbers, it was more likely that the number of males would have been stressed, especially where considerations of gun-powder permits impinge.

Togoland, Population Change, 1921-1931

Togoland was divided into northern and southern sections. Population returns of the former area are included in Table 5.2.7 (Northern Territories), and population returns for the latter part are included in Table 5.2.3 (Eastern Province). The discussions in this section will be limited to an examination of opinions of the census officers.

Northern Section of Togoland

An examination of the returns shows that the largest increases of population were reported for this part of Togoland. Cardinall

(1932, Vol.1, pp.153-54) attributed the increases almost entirely to immigration. As he put it:

> "In the Kusasi District and in Mamprussi the increase is entirely due to immigration. The writer in 1921 actually hunted buffalo and other game in the bush of these northern districts; today the bush has almost entirely disappeared and the whole countryside is covered with the compounds and fields of the newcomers who have migrated from the Eastern areas. The same movement is noticeable in Eastern Dagomba..."

The large population increases returned for the southern section of Togoland were attributed partly to the following causes:

"1. Inaccuracy of the 1921 figures through lack of qualified enumerators and suspicion of the people.

2. The non-determination of the international boundary between the British and the French spheres of Togoland.

3. Greater medical facilities and therefore lower death rate.

4. Less inclination of the people to migrate seasonally in search of work.

5. A large influx of strangers, not indigenous to the district."

Medical facilities had not been improved to an extent that would materially affect the lives of the masses. Notice that as early as 1850-1860, when the numbers of the population were not known and when there were no medical facilities for the general population, medical men were already claiming credit for the "rapid increase in the population." Also, that if the problem is examined on global scale, the areas with the best medical facilities are not also the areas with the highest rates of population growth. A general improvement in social conditions, including nutrition could have improved the general level of well-being but as geographers we should be cautious in attributing every improvement in health to improvements in medical science as such. The medical profession is not above self-interest.

Further elaboration of the problem is beyond the scope of this work. But the planners of the developing countries must be aware of the situation. Furthermore, data were not provided to prove the influence on population growth of improvements in medical facilities. There are no data to prove or disprove items (4) and (5).

The loss of population in the Krachi District was attributed to the following reasons:

1. Changes in the area of the district which excluded the Nanumba country which was then part of the Eastern Dagomba District.
2. The return of the former slaves in ever increasing numbers to their homes in Tumu, Builsa, etc. These were victims of Babatu's raids which had taken place over forty years before, and who were settled in slave villages along the Kete trading routes.
3. The opening of the Krachi-Atabubu road which gave opportunities to the youth of the Krachi district to build farm villages along the important route to Kumasi.
4. Seasonal migration to the cocoa fields.

The view that the population loss reported for Krachi District resulted from the departure of ex-slaves to go back to their old homelands requires further examination (Hilton, 1960, p.25). Reference to the age structure of Ghana in 1960 suggests that persons aged 65 years or more constitute about 3.2 per cent. only of the total population (Table 10.16); the proportion may be less, but the same ratio may be assumed for Krachi. If the slaves were brought in at the minimum age of 15, then after 40 to 60 years they would be between 60 and 70 years, and would therefore account for about 3 per cent. of the total population of this district. Many of them would be too old to return to their hard homelands in Builsa and Tumu, etc. Suppose a closed population is assumed, the majority of the population would not

therefore be slaves; even if they were the children of ex-slaves, they would have little inducement to go back. Furthermore, the raids of Samori and Babatu were previously used to explain the 'deficit' of young females in parts of the north, implying that the majority of the captives were females and not males. It seemed as though the same instance was being used to explain female deficit in both the source and the receiving areas. This is an improbable situation. The view that the population of Krachi may also have emigrated to the cocoa and urban areas of Buem-Krachi, Ashanti and the Eastern Province of the Colony, etc., seems more reasonable. It seems also that part of the population was omitted.

Returns of the Census of 1948

At the census of population in 1948, the total recorded was 4,118,450 of all races, of which 99.83 per cent. were described as Africans and the rest as non-Africans (Census, 1948, Table 1, p.41). Table 2.1 shows only the total African population returned for each major administrative region. The average annual population change for the decade was approximately 1.6 and not 1.78 per cent. as stated in the report (Census, 1948, p.10; p.25). The highest rate of change appears to have been recorded for Ashanti, and the lowest for the Northern Territories. Table 5.4.0 shows the distribution of the recorded population, the number of persons per square mile, the percentage population increase, etc., in each of the 19 administrative districts. Assuming correct enumeration, the rate of population change and differences of population densities should reflect differences in resource development (cf. Census 1948, Map 1; see also

Table 5.4.0

Population trends, 1921-1948. Total returns and number of persons per square mile by administrative districts, 1948, Ghana.

Administrative District	Population change percentage		Total Population	Area Sq.Mls.	Persons per sq.ml.
	1921-31	1931-48			
GHANA*	37.6	30.1	4,118,450	91,843	44.8
The Colony	34.8	30.6	2,222,810	26,401	84.2
Accra	26.4	66.0	224,771	918	244.8
Ahanta-Nzima	32.5	42.3	179,812	1,880	95.6
Akw-New Juaben	60.0	2.2	113,850	397	286.8
Birim	58.8	38.6	370,761	6,008	61.7
Cape Coast	38.8	27.2	495,369	3,922	126.3
Ho	44.0	37.4	172,575	2,464	70.0
Keta-Ada	33.5	26.2	304,268	1,954	155.7
Sefwi	61.7	54.7	65,208	2,695	24.2
Volta River	- 3.7	- 2.2	164,782	1,458	113.0
Wassaw-Aowin	29.9	35.7	131,414		27.9
Ashanti	42.3	41.5	818,944	24,379	33.6
Bekwai	45.7	35.9	157,984	2,220	71.7
Kumasi	26.3	63.2	376,283	5,910	63.7
Mampong	21.0	55.6	102,758	6,955	14.8
Wenchi-Sunyani	60.3	9.5	182,009	9,294	19.6
Northern Territories	40.3	21.6	1,076,696	41,063	26.2
Dagomba	25.9	23.5	224,506	9.611	23.4
Gonja	33.8	61.5	84,415	14,469	5.8
Krachi	-24.7	76.5	31,603	3,380	9.4
Mamprusi	57.9	13.4	531,130	6,376	83.3
Wa	29.8	24.0	205,042	7,227	28.4

* Including Togoland

Source: Based on data derived from Census, 1948, p. 25; p. 42.

POPULATION DENSITY, 1948

MAP 75.1

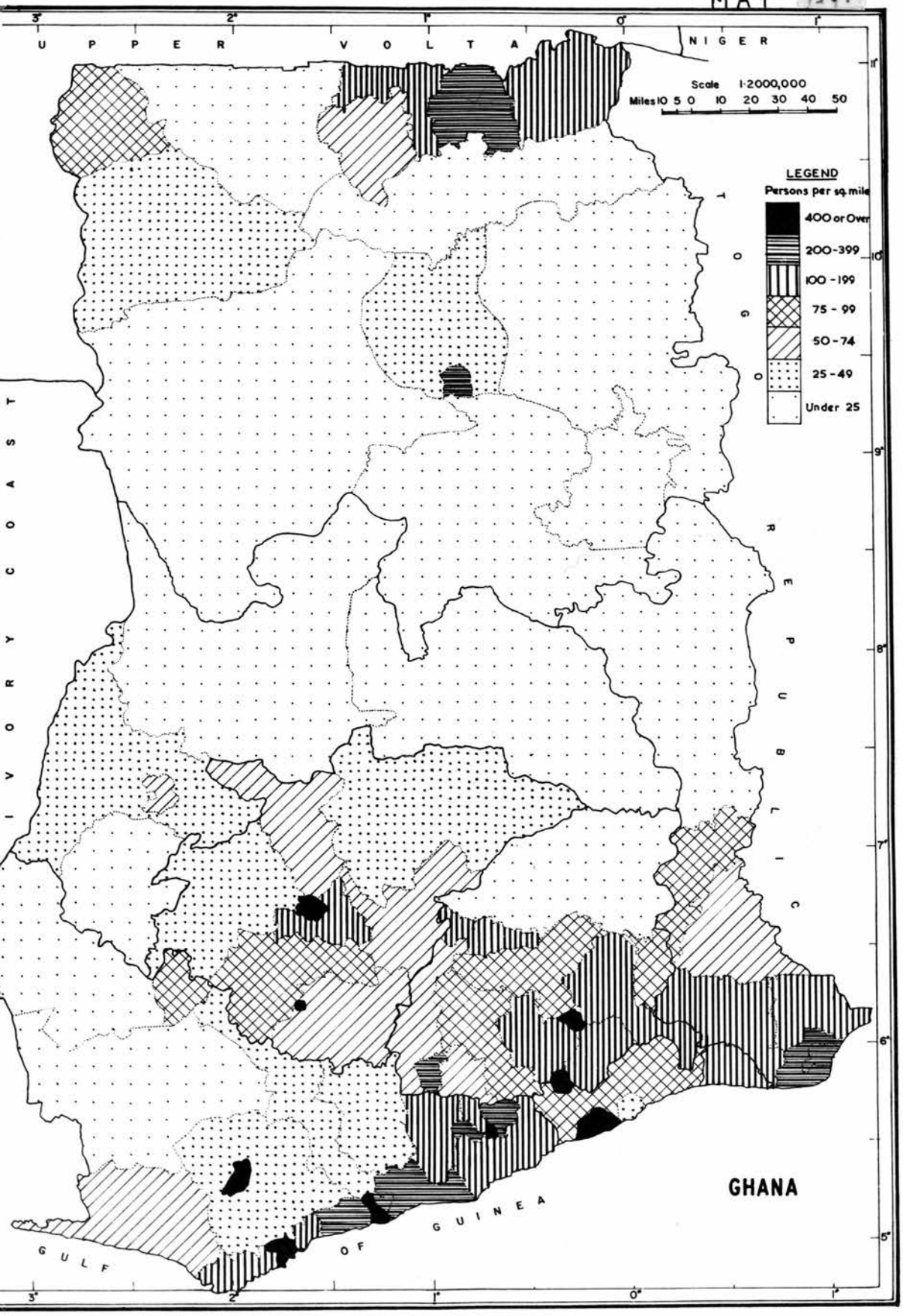


Table 5.4.1).

Distribution of Population Densities, 1948

The Colony was again the most densely peopled administrative region, and although it comprised less than 29 per cent. of the area, it accounted for over 53 per cent. of the total population. By contrast, the sparsely populated Northern Territories made up almost 45 per cent. of the total area, but accounted for only 26 per cent. of the total enumeration. Contrast the districts with high population densities with those with low population densities. Population distribution based on such large administrative districts conceals important local differences, especially differences in rural and urban population densities. Table 5.4.1 shows the distribution of the population based on 41 smaller census districts; here too this is not very successful. Nevertheless, besides the high population densities centred in and around the urban centres, e.g., Accra, Kumasi, Sekondi-Takoradi, notice the districts with predominantly rural population densities of 100 or more persons per square mile, e.g., Akwapem-New Juaben, Winneba, Keta, Ada, Volta River, Kumasi (2), Frafra, Kusasi Districts, and compare them with the districts with very low population densities of 25 persons or less to the square mile, e.g., Enchi, Kumasi (4), Mampong, Wenchi, Dagomba East, Gonja, Tumum Districts (Census, 1948, pp.12-13; cf. Hilton, 1960, p.13, Fig.7). Map 5.1 represents the distribution of the 1948 population based on the smaller-sized 69 census districts used in 1960. purpose of examining several maps and tables is to relate more closely the distribution of population of 1948 with that of both 1931 and 1960, since boundary

Table 5.4.1
Summary of Population Densities, 1948

Census Districts	Persons per sq.ml. 1948	Suggested causes of population trends. In order of importance.
THE COLONY	84.2	
Accra Administrative District		Presence of Accra Town (pop.135,926) and port; capital and commercial centre of Ghana; also Teshie (5,367) New Shai (5,247), Prampram (4,428); industries and fishing and farming.
Accra Municipal	3,398	
Remainder	101	
Ahanta-Nzima Administrative District		Presence of Sekondi-Takoradi (44,557), only harbour at Takoradi; headquarters of railway system; commercial and industrial centre, timber cutting, cocoa farming, etc.
Axim	49	
Takordi (excluding Takoradi-Sekondi)	180	
Sekondi	290	
Birim Administrative District		Cocoa farming; timber cutting; diamond mines at Akwatia, Asamankese,etc., Gold at Nitronang; presence of West African Cocoa Research Institute at New Tafo; immigration; main towns; New Tafo, Kibi (4450), Asamankese (8858), Oda (8374).
Kibi	49	
Mpraeso	28	
Oda	76	
Cape Coast		Cocoa and lime growing for export at Abakrampa and Asebu; fishing; timber cutting; education centres at Cape Coast; main towns: Cape Coast (23346) Winneba (15171), Swedru, etc., fishing and farming.
Cape Coast	129	
Dunkwa	43	
Winneba	204	
Ho	70	Cocoa, coffee and other farming; weaving and pottery. Towns: Ho (5852), Kpandu (4040), Hohoe (5636); emigration.
Keta-Ada		Fishing and farming; large scale commercial cultivation of shallots (onions) in and around Keta. Weaving; pottery at Weta, Seva, etc. Main centres: Keta (11380), Ada Foah (2327).
Ada	143	
Keta	164	
Sefwi	24	Cocoa farming, etc., timber cutting; gold mines at Bibiani, etc; bauxite at Awoso, Kanawerebo, etc; immigration from the Northern Territories, Nigeria and French territories, e.g. Ivory Coast, Upper Volta.
Volta River	113	Population loss due to emigration especially of Krobos to cocoa producing districts in Akim, etc. Main centres: Akuse, Tsito, Somanya.

Wassaw-Aowin		Gold mining at Tarkwa, etc.
Enchi	8	manganese at Nsuta, etc: other
Tarkwa	35	farming; immigration of people from the Northern Territories, French Territories, Nigeria, etc.
ASHANTI	33.3	
Bekwai Administrative District		Cocoa, timber cutting, pottery at Asamang, etc. Gold mining at Obuasi
Bekwai	71	(15876). Main towns: Obuasi, Bekwai
Obuasi	71	(4506); Akrofuom (2266), Jacobo (2239) etc.
Kumasi Administrative District		Cocoa farming, timber cutting, mining at Konongo and Odumasi, etc. Pottery
Kumasi 1	1570	at Pankronou; weaving; commercial and
Kumasi 2	233	industrial activities in Kumasi, etc.
Kumasi 3	86	Main centres: Kumasi (78483); Konongo
Kumasi 4	21	(6597), Agogo, etc.
Kumasi 5 (Juaso)	85	
Mampong	15	Cocoa farming.
Wenchi-Sunyani		Cocoa farming (employed over 23 per
Wenchi	11	cent. of male labour force); some
Sunyani	45	timber cutting.
NORTHERN TERRITORIES	26.2	
Dagomba Administrative District		Farming other than cocoa. Presence of Tamale as administrative and commer-
Dagomba East	18	cial centre of the Northern Territor-
Dagomba West	36	ies.
Gonja Administrative District		
Gonja East	9	Some farming. No cocoa.
Gonja West	4	
Krachi	9	Some cocoa. Other farming.
Mamprusi Administrative District		Emigration of population to the forest areas of the south. Farming;
Frafra	209	no cocoa. Main towns: Bawku (6888);
Gambaga (Zozugu)	28	Gambaga (1952).
Navrongo	92	
Wa Administrative District		
Lawra	81	Farming; no cocoa.
Tumu	11	
Wa	25	

changes make direct comparison difficult. Notice the concentration of population along the seaboard, between the sea and a line drawn from a point west of Axim in the west to Jasikan in the east (e.g., north of Hohoe); also in the extreme north-east of the country, e.g., Frafra, Kusasi, Kassena, and Nankanni districts; and in Ashanti, e.g., Kumasi South district. Contrast the aforementioned districts with those districts in the Voltaian basin with very sparse population densities which separate the densely peopled areas of the south from those of the north-east (cf. Map 7.2).

Table 5.4.1 also gives the reasons alleged to have been factors in population trends. Notice the significance given to cocoa farming, mining, timber cutting, transportation (e.g., railways and roads), urban activities (e.g., commerce), and migration. Compare, for example, the population trends and their suggested causes in Wassaw-Aowin Administrative district with those of the Volta River district. Table 5.4.2 gives the occupational structure of the male population for each of the 19 Administrative Districts. It is not easy to determine the proportion of workers in agriculture from the table; but it is fair to say that probably not less than 72 per cent. of the adult males were engaged in agriculture (including cocoa farming); notice the small number of persons in skilled occupations.

Administrative districts with a total decennial population growth 40 per cent. or more included Accra, Ahanta-Nzima, Sefwi, Mampong, Krachi. Contrast them with those districts where the growth rate was 20 per cent. or less, e.g., Akwapim-New Juaben, Wenchi-Sunyani, Mamprusi, Volta River districts (Table 5.4.0). Clearly most of the

very high rates and the low rates are very suspect. From Table 5.4.2 it is evident that Akwapim-New Juaben district had high proportions of the population employed in cocoa production and skilled occupations, yet the reported population growth rate there was very much less than the national average (cf. Krachi). Surprise is expressed in the census report (Census, 1948, p.32) at the small returns reported for Wenchi-Sunyani Administrative District, in spite of the growing importance of cocoa farming there, and so a very high rate of emigration was suggested. An examination of the population according to their places of birth inidcated that not less than 84 per cent. were locally born; about 80 per cent. of the adult population were occupied in agriculture, and the proportion of the male plpulation aged from 16 to 44 years was just under the country's average (cf. Table 5.4.3) or alleged to have been even lower than in 1931; the male ratio was only 997 per 1,000 females, as compared with the national figure of approximately 1,020. A population structure such as the foregoing would suggest heavy net emigration of male adults as stated in the report. But the conclusion is misleading.

On the assumption of correct population returns, the predominance of cocoa farming in a rural economy need not induce net immigration until all available labour is fully utilized (see Chapter 7). If the area was previously one in which heavy net emigration was taking place because of the absence of work, the initial result of the introduction of cocoa farming, for which no special skills are required, would be to discourage emigration. Secondly, Appendix I shows that, whereas in 1931 the adult population was described as those aged from 15 to

Table 5.4.2

Occupational Structure of Male Labour Force in Percentages, 1948

Administrative District	Cocoa cultivation	Skilled workmen	Trades	Unskilled labour	Others
GOLD COAST	11.5	9.7	4.3	13.6	60.9
The Colony	13.0	12.8	4.7	17.5	52.0
Accra	0.5	20.0	5.4	10.9	63.2
Ahanta-Nzima	1.2	11.2	2.7	12.1	72.8
Akwapim-New Juaben	12.8	14.5	5.6	17.0	50.1
Birim	28.7	9.6	6.2	18.0	37.5
Cape Coast	19.4	11.1	4.6	11.4	53.5
Ho	16.7	15.5	5.8	12.6	49.4
Keta-Ada	0.1	11.4	3.3	35.8	49.4
Sefwi	18.6	8.2	4.6	21.7	46.9
Volta River	13.8	8.9	4.3	8.7	64.3
Wassaw-Aowin	9.5	18.8	3.6	30.8	37.3
Ashanti	21.5	10.0	6.1	17.0	45.4
Bekwai	22.1	9.9	4.8	19.7	43.5
Kumasi	23.2	12.9	6.0	17.2	40.7
Mampong	13.8	8.2	6.1	20.1	51.8
Wenchi-Sunyani	21.6	4.6	7.7	12.1	54.0
Northern Territories	0.4	2.9	2.1	2.4	92.2
Dagomba	0.2	3.3	3.5	4.1	88.9
Gonja	00.0	3.0	2.1	7.2	87.7
Krachi	7.6	4.0	2.3	8.7	77.4
Mamprusi	0.2	1.7	1.5	1.0	95.6
Wa	0.1	5.8	1.9	0.8	91.4

Source: Census, 1948, p. 21. Table VI.

45 years, in 1948 they were defined as those aged from 16 to 45 (cf. Table 5.4.3). This shortened span of the number of years would give a mistaken appearance of reduced numbers of adults in 1948. Thirdly, persons in that age group would probably try to avoid taxation either by mis-stating their ages or by disappearing. Fourthly, most of the district was unmapped, and still is inaccessible, and most farmers make long distances by foot to reach their farms from the nearest roads, so that if many of the people living in hamlets and farms were trying to establish cocoa farms, they could easily be omitted by the enumerators. It is probably true that not more than two-thirds of the de facto population were actually counted, and so the small increases reported were not primarily due to emigration.

As an example of temporary population increases, the case of Otrowe, a village close to Ada in the Ada District, may be cited. The normal population was estimated at about 350 (this figure may be an understatement), but the population recorded at the 1948 census was 5,786; the explanation given was the assembly of mostly Ga and Adangbe fisherfolk for a seasonal fishing bonanza (Census, 1948, p.29). In most places, the high increases reported only reflected corresponding omissions at the previous census, e.g., Krachi. Where large apparent increases were reported, for example, Manpong and Birim Administrative Districts, the population structure suggests large omissions (Table 5.4.3).

The 1948 Census was taken in a background of deep political suspicions and nervousness (cf. Bing, 1968, p.94), but the importance of this factor as a source of difficulty was not sufficiently stressed.

Table 5.4.3.

Distribution of African Population by Broad Age Groups and Sex, 1948.

Administrative District.	Percentages							
	Males aged				Females aged			
	0	1-15	16-45	45+	0	1-15	16-45	45+
THE GOLD COAST	4.1	18.0	21.3	7.1	4.2	16.8	21.8	6.7
The Colony	4.1	17.7	21.3	7.6	4.2	17.2	20.9	7.0
Accra	2.5	15.8	26.3	7.1	2.6	16.4	22.5	6.8
Ahanta-Nzima	4.6	15.1	22.6	8.2	4.8	15.9	21.1	7.7
Akwapim-New Juaben	3.0	18.9	20.0	7.3	3.2	18.7	21.5	7.4
Birim	3.6	19.6	20.7	6.8	3.7	18.5	21.2	5.9
Cape Coast	4.7	17.5	19.1	8.1	4.9	16.9	20.7	8.1
Ho	3.2	20.4	19.7	7.2	3.2	18.6	21.5	6.2
Keta-Ada	6.1	17.2	18.2	8.4	6.1	16.6	19.4	8.0
Sefwi	3.4	17.8	26.0	6.7	3.4	16.9	20.3	5.5
Volta River	4.4	18.2	19.8	7.9	4.5	17.7	20.2	7.3
Wassaw-Aowin	3.1	15.3	31.1	7.0	3.4	14.7	20.9	4.5
Ashanti	3.8	18.9	21.8	6.3	3.9	17.9	21.4	6.0
Bekwai	3.9	19.4	21.3	6.5	4.0	17.8	21.2	5.9
Kumasi	3.4	18.7	22.5	6.4	3.6	18.1	21.4	5.9
Mampong	4.4	18.8	21.3	6.9	4.4	16.6	20.6	7.0
Wenchi	4.0	19.0	21.0	5.9	4.2	18.4	22.0	5.5
Northern Territories	4.1	18.1	21.1	6.4	4.2	15.5	23.9	6.7
Dagomba	4.1	18.7	21.5	6.4	4.0	16.5	22.5	6.3
Gonja	4.9	18.0	23.6	4.5	4.8	16.4	23.6	4.2
Krachi	4.3	19.0	24.4	4.5	4.3	16.7	23.2	3.6
Mamprusi	4.0	16.8	21.0	7.4	4.1	14.3	24.4	8.0
Wa	4.3	20.3	19.4	5.1	4.5	16.9	24.3	5.2

Source: Based on data derived from Census, 1948, Table 15, p. 80; p. 90, footnote.

The report (Census, 1948, p.9) stated that:

> "One source of error was attributed to the deliberate opposition and refusal to allow a count by certain groups of villages in Gomoa Assin and Gomoa Ajumako and a few isolated villages elsewhere...but the villages were known and it was possible to obtain a considered estimate of the population involved...Any errors in these cases were more likely to involve over- than under-statement... furthermore, the total affected did not exceed twenty thousand and such error as may be in the estimate is insignificant in relation to the total population, as it represented less than one half of one per cent. of the total enumeration."

The explanation begs the question. Firstly, the accuracy of an estimate would depend on the preciseness of knowledge of the population and of the areas concerned; secondly, there is little reason to believe that the omissions were evenly distributed throughout the country; thirdly, assuming that the 20,000 was insignificant in relation to the total population, even 10,000 could make an enormous local difference and distort the pattern of area distribution, an important concern of geographers.

For example, in 1948 a population of 1,867 was returned for Tantum, a town in the problem area referred to above, but this figure was considered over generous. In 1960, only 12 years later, a population of 6,838 was returned. When I visited the town with a group of students to make a geographical survey of it, we found that by far the largest proportion of the inhabited houses of this dreamy, predominantly rural town had been completed before 1950; 94 per cent. of the population were locally born, and 90 per cent. of the adult population were occupied in agriculture. These are not the characteristics of an area enjoying heavy net immigration of population. 70 per cent. of the population were more than 12 years of age, meaning

that they were born before the 1948 census; therefore the large increases could not have resulted from natural increase either.

The total population showed a significant male preponderance which increased among persons aged 15 years or more. A population structure such as this might readily be interpreted as indicative of male selective net immigration, but this is misleading. A further analysis of the population returns shows that the absolute male excess in the population was 497; every cohort aged 15 years or more showed a significant male excess, whilst females predominated at younger ages. The large proportion of male adults returned as locally born would suggest that the male excess was due to heavy net out-migration of females, and not male in-migration. The population of Tantum was probably heavily understated in 1948. Further research in the pattern of out-migration by females from the rural districts is here urged.

Most of the factors which adversely affected the accuracy of the population returns at previous censuses were still relevant to the census of 1948, e.g., vagueness and overlapping of boundaries, etc. For example, the Wenchi-Sunyani Administrative District contained part of the Kumasi Native Authority, and areas not administered by any local authority; Bekwai Administrative District comprised part of Kumasi N.A.; Accra Administrative District contained only part of the Ga Native Authority. One of the most serious inconveniences in the use of the Census Report is the dismemberment of local councils and the artificial creation of districts with fragments of other local councils (Census, 1948, p.80, Table 15).

Arrangements made for the census

The Census Ordinance, 1948 empowered the Governore-in-Council "from time to time as he may think fit by order to direct a census to be taken of the Gold Coast or any part thereof;" it provided for the appointment of a Chief Census Officer, supervisors and enumerators; preparation and issue of forms and instructions, and for expenses to be paid out of the general revenue of the Gold Coast. There was to be a penalty for refusal to give information, refusal to fill in schedules, and wilful default by enumerators (Census, 1948, p.398). A subsequent order issued on 24th November, 1947 stated that the census would be taken on the 8th of February (1948, loc. cit.). However, on 1st December, 1947, Mr. Dowden, Census Commissioner, issued circulars to modify the census dates for the Northern Territories, Wenchi-Sunyani and Mampong Districts (Census, 1948, p.403). They read:

> "Owing to the difficulty of obtaining sufficient qualified enumerators and the distances that have to be travelled, enumeration on form A cannot be carried out...on that day and you are, therefore, authorised to carry out the enumeration during the period 1st January to 21st January, 1948 (inclusive).
>
> If there are in your district any difficult areas where you consider those three weeks will not be sufficient...it is proposed to extend the time to include the last week in December, 1947.
>
> Consideration will, of course, be given to exceptional cases but it is very desirable that enumeration should not extend over more than four weeks and that those weeks should be consecutive."

The circulars to other districts stated that the 8th February would be the census day in all urban places where form B was to be used; however, where form A was to be used the dates would normally be from the 6th to the 10th (inclusive) of February, 1948; but in

exceptional circumstances, the time would be extended. The significance of these changes was that simultaneity of enumeration was thrown overboard.

A study of the memorandum sent to Census Officers "to assist them in carrying out their duties and to secure uniformity in obtaining population figures" shows that uniformity was just what was compromised (Census, 1948, p.399). As it stated:

"2. Africans will be counted on either Form B or Form A; non-Africans on Form C.

3. Form B will be used for Africans in the more literate towns. The aim is to use it in those towns in the Colony and Ashanti thought to have a population of over 2,000 persons, the decision being left to the Census Officer in agreement with the Census Commissioner.

4. Where Form B is used every person will have to be listed separately and it will probably not be practicable to use it unless at least half of the compounds are expected to have somebody sufficiently literate to complete it. Where the householder cannot complete, or get the form completed, it will be necessary for the enumerator to add to it for him and the proportion left to enumerators should not exceed 50 per cent.

...

7. Where Form B is used the census will relate to the population on Saturday, 8th February, 1948...The Forms will be delivered to houses and compounds on the preceding Friday and Saturday and collected on the Sunday, Monday and Tuesday.

...

9. Form A will be used for Africans wherever Form B is not used.

10. Form A will be completed entirely by the enumerator who will count and record the people in groups, the most usual groups being the occupants of one house or compound.

11. Because of the limited number of persons suitable for enumerators in the areas with few literates it will not be possible to make the count on A Forms relate to one day only.

...

13. In the Northern Territories, and probably in the northern parts of Ashanti it is anticipated the census will take

> about three weeks...in the early part of January, 1948. Similar provisions may have to be made for some of the outlying parts of the remainder of Ashanti and of the Colony..."

Other stipulations in the aforementioned memorandum were that Form C would apply to the population on Sunday, 8th February, 1948. Slightly modified versions of Forms B and C would be used for institutions such as hospitals, asylums, prisons, police quarters, military barracks, residential schools, etc. Anyone with any familiarity with filling in forms will readily appreciate how frequently it is difficult for the interviewee to understand certain items of the questionnaires. For example, if in a town where Form B was used it was later found out that the householder had been able to complete only less than 50 per cent. of the items as requested in paragraph 7 of the memorandum, we are left to speculate whether the completed forms would be rejected or included with Form A. Where Form C was used the staff of the establishments were to be entered on differing forms from those of the inmates, and arrangements were to be made for the police to count people not living in dwellings on the night before the census was taken in towns where Form B was used. Apart from the unfortunate method used in the towns, the counting of its floating population in the villages was left to take care of itself.

Enumeration load varied considerably. It was suggested that a reasonable area where Form B was used should contain from 500 to 1,000 persons; where Form A was used it should contain from 1,000 to 1,5000 persons in the southern part of Ashanti, but further north, 2,000 or more persons. The greater the load the higher was the probability o error.

A supervisor's area would contain some 12 to 20 enumerators' areas. All completed forms were to reach the Census Commissioner by 24th February. On the basis of recommendation made by the Korsa Committee (Census, 1948, p.404), census officers working in the southern part of the country received higher remuneration (about one-third more) than those in the northern territories, in spite of the fact that the greatest difficulty was found in obtaining a sufficient number of qualified persons to undertake the task of counting. As a result of this the enumerator's district in the north was considerably enlarged. It was not infrequent for a single enumerator in that part of the country to count from three to five thousand people (Census, 1948, pp.8-9). Clearly, it was those working in the difficult conditions of the northern territories who should have been paid more.

The method of age determination was unsatisfactory. The instruction to enumerators simply stated that babies who could not walk were less than one year old, and those who could were one year but less than 16 years old; persons too old to have children were over 45 years. In Ghana, men over 45 years of age do not consider themselves too old to have children, and in the case of women the problem is not so easily resolved.

A prepared list of 62 tribal groups was supplied to enumerators for identifying the ethnic composition of the population; as a system of classification it left a great deal to be desired. For example, as was shown earlier, the impression was created that Hausas were predominantly of Ghanaian origin. Secondly, a Southern Nigerian was considered either a Yoruba, Warri, Ibo, etc., and a Northern Nigerian

was simply one who came from the Northern Provinces of that country.

The classification of the population according to the level of literacy did not take account of the sizeable proportion of people who were literate in the local languages, or who did not attend formal schooling, or who went to private (or proprietary) or Arabic schools. The classification of the population according to economic conditions did not distinguish clearly between occupation and industry.

A prepared list of localities was supplied to enumerators with instructions to add such new places as might be discovered in the field. An examination of the report indicates that they were inadequate, and although officers added a few more localities to them, probably between 20 and 30 per cent. of the de facto population of the entire country was omitted at the census of 1948. Specific cases will be demonstrated when discussing the population census returns of 1960.

Summary

In the foregoing chapter, the pattern of population growth and distribution in Ghana as a census unit from 1921 to 1948 was discussed, and the relationship between the physical environment, resource development and population distribution was demonstrated.

The period 1921 to 1948 was considered a convenient time block because under the British Administration the entire country was enumerated for the first time in 1921 and for the last time in 1948. Ghana became independent in 1957.

A continual problem was the discrepancies and errors which occurred at the various censuses during the period. The sources of these difficulties were analysed.

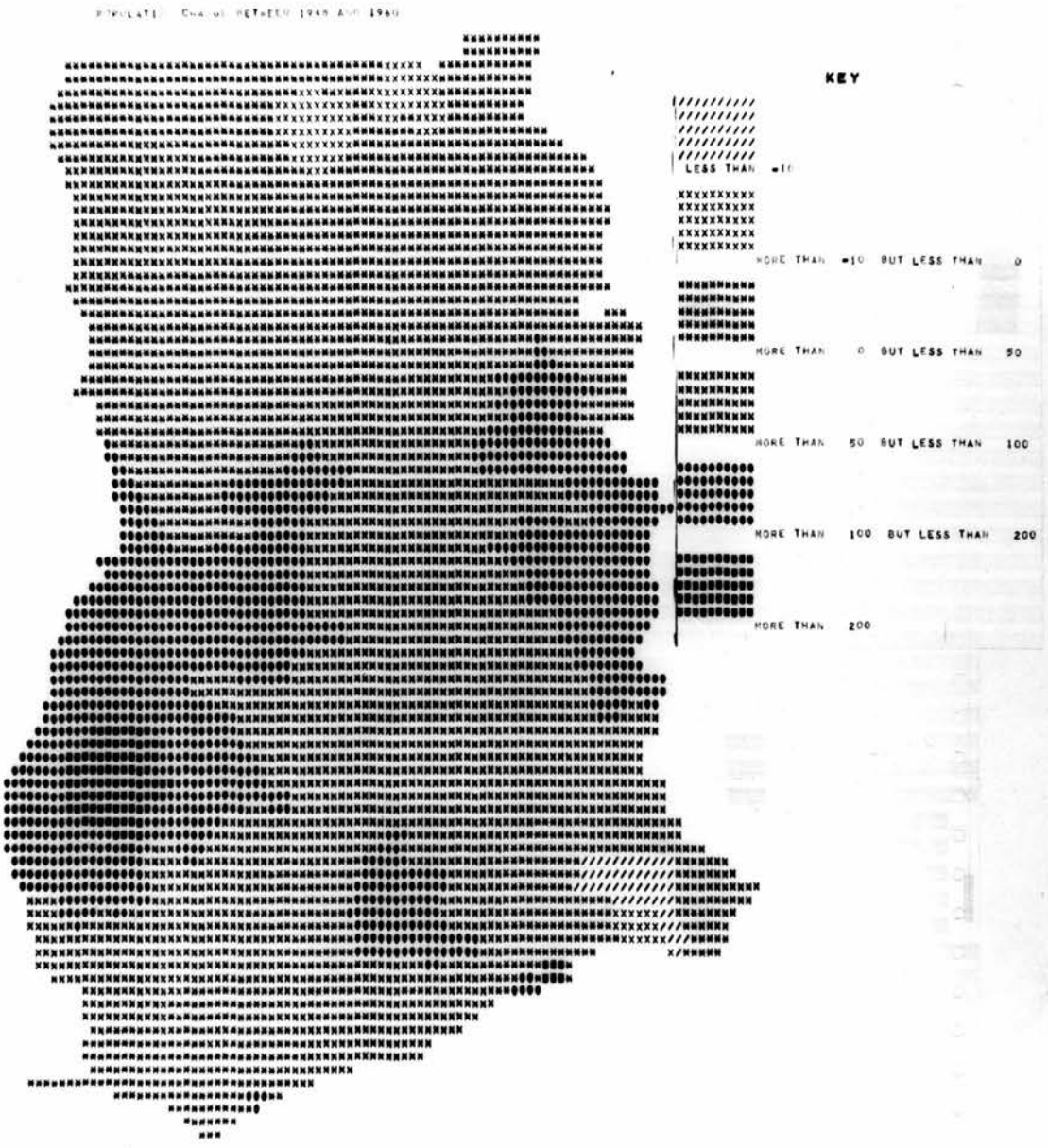
C H A P T E R 6

POPULATION CENSUS, 1960 AND QUALITY OF RETURNS

The 1960 population census (see Census, 1960, Vol.1, Table 1, pp.xxii) reported a population figure of 6,726,815, which represented an increase of 63.3 per cent. on that of 1948. The largest increases were reported for Brong-Ahafo, Accra Capital and Ashanti Regions, whilst the lowest were returned for the Northern and Upper Regions (Table 6.1). At the time of the census both the Western Region (administrative capital, Sekondi-Takoradi) and Central Region (capital, Cape Coast) were contained in one large region called the Western Region (capital, Cape Coast); similarly, both the present Northern Region (capital, Tamale) and Upper Region (capital, Bolgatanga) were combined in the then Northern Ghana (capital, Tamale). Accordingly, the census reports were published on the basis of the regions as defined at the time of census. Appendix V shows the 1960 Census districts.

Table 2.1 relates the population returns of 1960 to those of 1948. The reported rate of change shown in Table 6.1 was based on the actual population returns. The adjusted rates represent what were estimated to be the approximate rates of population growth were the previous censuses correct. Notice that in this case the adjusted figures were always considerably lower than the reported ones; the difference between the former and the latter must represent varying effects of defective enumeration (see chapter 2).

The absolute difference between the reported figures for 1948 and 1960 may be called "the additional population" and represents



MAP 6.7

SOURCE: based on data derived from Census, 1960 and drawn by computer by author.

combined effects of poor enumeration, natural increase/decrease, and net migration; it amounts to about 2,600,000 people. Map 6.2 shows the distribution of "the additional population".

Table 6.1

Total population, and rate of population growth by regions, 1960

Region*	Total population	Annual rate of change in per cent.	
		Recorded rate	Adjusted rate
Western Region		4.3	2.3
Central Region		3.7	1.7
Accra C.D.		6.8	4.6
Eastern Region		4.2	2.2
Volta Region		3.8	1.8
Ashanti Region		5.5	3.5
Brong-Ahafo		7.5	5.4
Northern Region		2.9	1.3
Upper Region		1.2	-1.0
Ghana		4.2	2.7

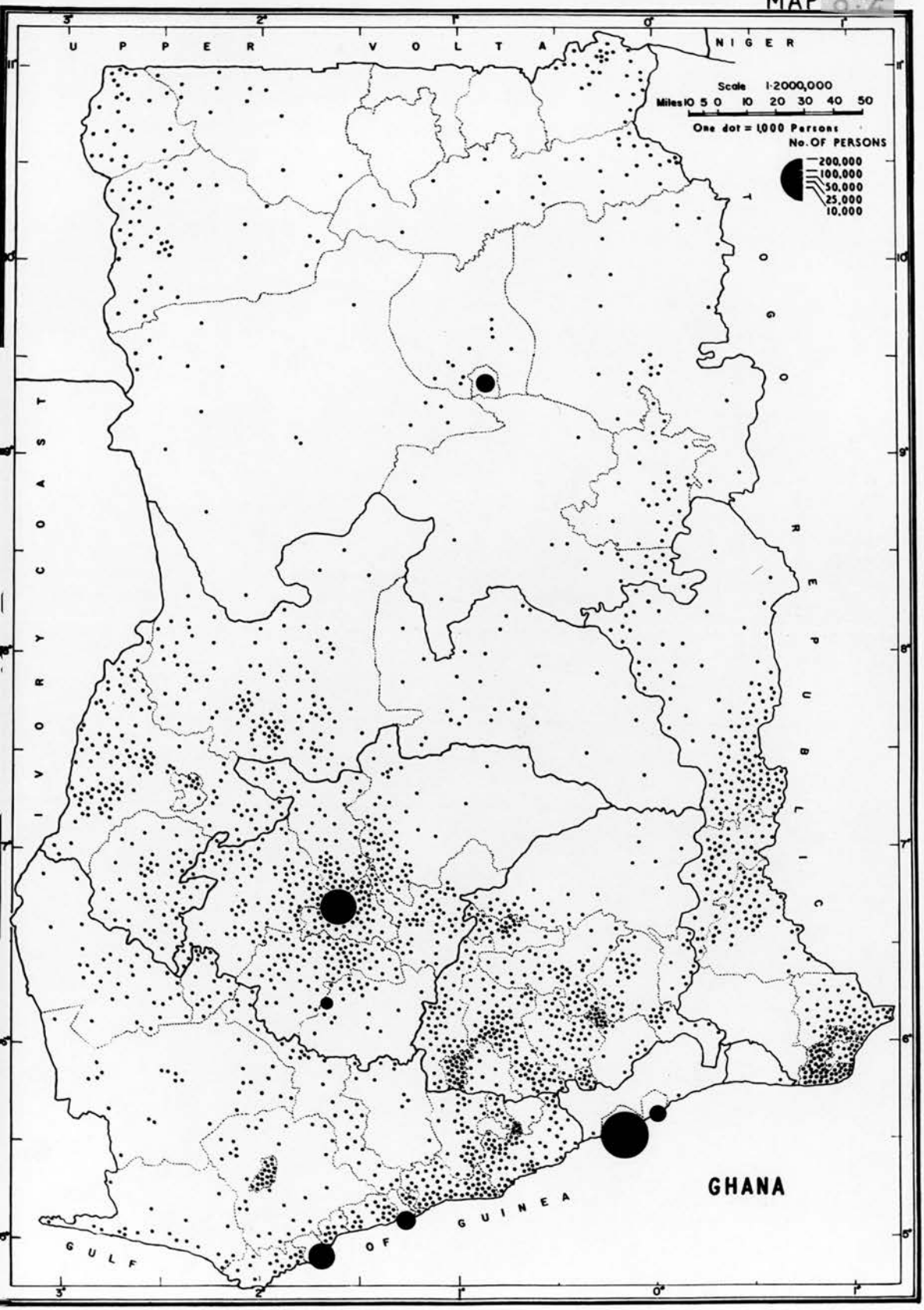
*Region as defined after census date.

Source: based on data derived from Census, 1960.

On the assumption that the average annual rate of change was 2.7 per cent. for the entire country, then the total population increase between 1948 and 1960 was about 37.4 per cent.; the difference between this figure and the reported value of 63.3 per cent., i.e., 25.9 per cent., probably measures the amount of under-enumeration made in 1948 suggesting that the de facto population in 1948 was approximately 5,184,900 (cf. Chapter 5). The measure in which these or other estimates can be relied on depends on the accuracy of the returns of the main 1960 census, and subsequent post-enumeration surveys. However,

DISTRIBUTION OF POPULATION INCREASE
ADDITIONAL POPULATION 1948–1960

MAP 6.2



SOURCE : Bureau of Statistics, 1960 Population Census of Ghana

a difference between the two latter measures does not mean that one or the other is nearer the true position; nor, given the present stage of census-taking, does complete or proximate coincidence of the results of the two operations imply a proof of correctness. Both can be wrong.

It is recognized that no census, however well-planned and executed, is free from discrepancies. In the past most census-takers did not check the accuracy of the data they published; they did not do so in Ghana up to and including the census of 1948; they either took the accuracy of the returns for granted, or their bland comments on some of the more obvious sources of error were intended to justify their faith in the returns. But since 1950 an increasing number of countries, including Great Britain, India, Tunisia, Yugoslavia and, especially, the United States, have carried out post-census surveys to check the accuracy of their censuses, and also to examine the circumstances in which the discrepancies were made with a view to future improvements in methods.

It is now recognized that sample surveys could be used in place of full-scale decennial censuses; however, the extent to which they can replace the decennial censuses varies from country to country and, although no country has as yet decided to dispense entirely with the latter in favour of the former, more and more countries have done so partially. In the 1960 Population and Housing censuses, the United States Bureau of Census restricted the 100 per cent. enquiry to only five statistical questions, instead of the nine of 1950. The remainder, some twenty-two questions, were put on a 25 per cent.

sample basis. Economy in cost and time with increased accuracy were frequently the main reasons for such procedures.

In Ghana, besides the main full-scale census of 1960, a Post-Enumeration Survey (5 per cent. sample) was carried out about six weeks later to check the accuracy of the main census, and also to make a supplementary enquiry into such matters as education, occupation, migration, birth rates, etc., as it was felt that the inclusion of such an enquiry in the main census would have increased the likelihoo of errors. At the processing stage, the two enquiries - the Census Evaulation Programme and the Supplementary Enquiry - were separated. The Post-Enumeration Survey (P.E.S.) adopted four main objectives, i.e., the measurement of coverage error, the measurement of observational or content error, improvement of techniques, and the obtaining of supplementary information (Census, 1960, Vol.5, pp.313-401).

Many of the P.E.S. checks conducted in other countries, for example, in the United States Bureau of Census checks, revealed quite significant inaccuracies arising mainly from under-enumeration; the 1950 United States population census was subsequently found to contain a net understatement of 2.1 million persons (or 1.4 per cent. of the total United States population); another study raised the estimated net under-enumeration to some 3.7 millions (or 2.5 per cent. of the total United States population); and Ansley Coale (1955) in another study conducted by an entirely different method raised the amount of estimated under-enumeration to some 5.4 millions, or 3.6 per cent. It is interesting to reflect on all these discrepancies in the population counts of the United States of America, a country with a century of

experience in census-taking, and vast financial and technical capabilities, which had also conducted the most extensive and intensive census evaluation studies, and built up an appreciable experience and a voluminous library of census literature, but whose census technicians, nevertheless, openly admitted discrepancies.

In the preceding chapters it was demonstrated that the previous censuses taken in Ghana, including that of 1948, contained large amounts of under-enumeration.

The house-coverage check was part of the P.E.S. Its aim was to find out if any houses had been left out and the reasons for such omissions (Census, 1960, Vol.5, pp.353-372). It showed that nearly 12,000 houses were omitted. One reason for such omissions was that in some cases a house located in one enumeration area had its entrance in another. On the assumption that there were on average 5.3 persons to every dwelling house (Census, 1960, Vol.1, Table 1, pp.xxi-xxxii), the number of persons involved was (11,748 x 5.3) or 62,264 persons or 0.94 per cent. of the entire enumeration in 1960. An examination of the data showed that the amount of house-coverage error varied from region to region, and within the same region, and sometimes even within the same enumeration area (an enumeration area being the area of operation of one census enumerator). The highest percentage of omissions were in Ashanti, the Eastern Region and Northern Ghana in that order (Census, 1960, Vol.5, pp.198-200). The volta Region had no residual or unmatched houses in the P.E.S. The Census Officer had expected omissions in the first three regions named above, because towards the end of the census, reports were received of villages,

hamlets, settlements, etc., which had not been included or covered in the counting; investigations confirmed some of them, and arrangements were made to count them. Nonetheless, the fact that no such reports were received from the Volta Region or only a small proportion thereof were proved in Northern Ghana is no proof of complete coverage and should not be made a cause for complacency.

It is curious that those very regions of Ghana with better means of communication, a higher level of education and civic consciousness, and general all-round development should have had a higher proportion of their houses omitted. It is probable that many houses may have been omitted in the Northern Volta region and Northern Ghana, but on account of the low level of education and social awareness among the general population in those districts, and because the people were less articulate, the omission, if any, was not brought to the notice of the responsible officials. Possibly they were not even aware that a census of the population was being conducted. The fact that those regions that reported few or no omissions also bordered on foreign countries could mean that some of the localities were not sure whether they were in Ghana or outside it.

Besides the checks on the coverage of houses, a check was conducted also on coverage of persons within houses on 20 per cent. sample basis of the P.E.S. population (see Table 6.2 below). The P.E.S was used as a standard against which the results of the main census were measured, so that a negative figure denotes that the P.E.S. population was smaller or the census figure was higher; similarly, a positive number suggests that the P.E.S. figure was higher and the

census one was lower. That is not to imply that either the P.E.S. results or the main census returns were more accurate or less so than the other.

For example, the table shows that in respect of all ages, the P.E.S. was smaller than the census figure by 10.6 per cent. when vacant houses are also included; but if they are excluded the value is 14.3 per cent. On the assumption that the P.E.S. was more correct than the census, this difference implies over-enumeration at the census.

Notice that in all regions the values are negative, that is, the P.E.S. suggests over-enumeration, the highest discrepancy levels having been attained in the Western (and Central) Region, and Eastern Region and Brong-Ahafo; again the level of agreement was higher in the urban districts than in the rural. The low value reported for the Northern and Upper Regions is suspect.

Table 6.2

Discrepancy between the number of populations enumerated at the main census, and that enumerated at the Post-Enumeration Survey, by regions in percentages ,1960.

Region	Percentage discrepancy
All Regions	-10.6
Western and Central Regions	-14.3
Accra Capital District	- 4.5
Eastern Region	-10.6
Volta Region	-14.4
Ashanti	- 6.9
Brong-Ahafo	-17.6
Northern and Upper Regions	- 6.5
All Urban L.A.s	- 4.8
All Rural L.A.s	-11.6

Source: After Census, 1960, Vol.5, Table 28.2 'B', p.375.

The index of enumeration is a measure of the coincidence between the P.E.S and the main census counts and is of the greatest significance in interpreting the structure of the population (Census, 1960, Vol.5, p.376). The percentage of identical reporting of ages also differed widely from region to region. Table 6.3 shows the index for the entire population, and for persons aged 15 years and over only. The index for the entire population is higher than that for persons aged 15 years and over only; this appears to be so in every region.

What this probably means is that age determination was more reliable among children aged 15 years or less, than among adults aged 15 years or more. The values appear lowest in Brong-Ahafo and highest in Accra Capital District, and surprisingly high in the Northern and Upper Regions. In view of the fact that the labour force is derived mainly from those persons aged 15 years or more, these discrepancies must be borne in mind when interpreting the qualities of the population.

Table 6.4 shows the distribution of the index of enumeration by broad age groups, and according to sex. Notice that the index is generally higher among females than males; also the very low index for persons aged from 20 to 24, which should affect the validity of the age and sex structure. Compare this table with Table 10.4.1 and note the very low male ratio of persons aged from 10 to 24 years in the total population. Much of this female predominance must be the result of the low index of enumeration among males of that age group.

An analysis of the figures reveals that the lowest index of enumeration was reported for Brong-Ahafo region where the P.E.S enumerated only 50.9 per cent. of the males aged respectively 25 to 34,

Table 6.3

Index of Enumeration between Post-Enumeration Survey and Census, 1960.

Region	Percentage	
	Total	Aged 15 years or more
Ghana	83.0	79.5
Western and Central Regions	81.2	78.2
Accra Capital District	91.8	73.4
Eastern Region	80.3	73.4
Volta Region	84.0	80.9
Ashanti	86.6	81.9
Brong-Ahafo	66.4	62.2
Northern and Upper Regions	87.7	84.2

Source: After Census, 1960, Vol.5, p. 376, Table 28.2 'D'

Table 6.4

Index of Enumeration by Selected Age Groups, Male and Female, 1960.

Age	Per cent		
	Male	Female	Total
0-4	--	--	82.9
5-14	--	--	90.7
15-24	70.5	82.8	76.9
25-34	73.4	82.3	78.0
35-44	75.3	86.6	80.6
45-54	79.6	88.8	83.7
55-64	79.8	93.8	82.6
65 and over	78.9	87.1	82.7
15 years and over only	74.4	84.7	79.5

Source: After Census, 1960, Vol. 5, p. 376, Table 28.2'D'.

and 35 to 44 years. In the Western and Central Regions the index of enumeration was 65.0 and 68.3 per cent. respectively of persons aged 15 to 24, and 25 to 34 years (Census, 1960, Vol.5, pp.313-408).

There seems to be an implicit assumption that the P.E.S is more accurate than the census; however, to find out whether or not the P.E.S. could be relied upon to evaluate the main census returns, another field check was carried out by the Census Office, and also because of the large discrepancies found between the census and the P.E.S. (Census, 1960, Vol.5, pp.378-381). The exercise revealed the following sources of error:

1. Discrepancy due to fictitious enumeration in the census.
2. Discrepancy due to under-enumeration in the census.
3. Discrepancy due to under-enumeration in the P.E.S.
4. Discrepancy due to other and unknown causes.

It was reported that there was no firm evidence for item (1), but that most of the problems fell into item (3) above, namely , that the census enumerated them but the P.E.S. omitted them.

An estimate of double enumeration was placed at between 3.3 and 10.5 per cent. of the total enumeration; and the total provisional partial net error in coverage was estimated at between 0.6 and 2.5 per cent. over-enumeration (cf. ibid., p.384).

Another procedure adopted for testing the results of the census was the evaluation of content error where the emphasis was on the proportion of identical reporting of ages between the P.E.S. and the census (Census, 1960, Vol.5, pp.387-401). To do so a hypothesis of no difference betweeen the two was assumed, that is, both the P.E.S. and the census reports were equally reliable, hence the difference

between the two sources were termed discrepancies and not errors. Table 6.5.1 shows the proportion of persons of both sexes who reported identical ages at both the census and the P.E.S. Notice that the percentage of identical age declarations diminished with advancing age; also that up to age 24, the proportion was higher for women, and after that age the position became a bit confused, but the proportion tended to be higher for the males; and among the entire population, the males made a better showing than the females. Note particularly the sudden switching of roles at ages 20 to 24. The fact that the males more frequently declared identical ages in both the P.E.S. and the census does not imply that they were more correct in stating their ages. They could be consistently wrong.

The combined effects of under-statement of ages and over-statement give the net values of identical age declaration. Positive values indicate that ages declared at the census were higher than at the P.E.S. or that ages were overstated; and negative figures show that ages in the census were lower, or that ages were understated. Table 6.5.1 shows a tendency among younger age groups to overestimate their ages, and among older persons to understate theirs. Notice especially that among persons aged 10 to 14 years and 30 to 34 , males tended to overstate their ages, whilst women tended to understate theirs. In the entire population the ages of males tended to be overstated, whilst those of females tended to be understated (cf. Census, 1960, Vol.5, p.390).

As quinquennial cohorts are more frequently used than single year cohorts in statistical analysis, Table 6.5.2 shows the same

information as Table 6.5.1 but in five-year groups. Notice also the increasing tendency to understate their ages among older people. Contrast especially the net values for males and females aged 40 to 49 years. Overstatement of ages could lead to a distortion of the age-sex structure. Its significance for accuracy of census returns and intepretation has already been demonstrated (see Chapter 2).

The distribution of discrepancies in age description by regions is shown in Table 6.6 . Contrast the very low values reported for the Northern and Upper Regions and Brong-Ahafo with the high figures recorded for Accra Capital District and the Western and Central Regions. For the country as a whole only about 57 per cent. of the population stated the same ages or ages differing by not more than one five-year interval in both the census and P.E.S. enumeration; and in every region the males rated higher than the females. The reasons for these differences are not clear. It could be that in Ghana there was a higher proportion of literate males than females, or that the enumerators who helped the respondents to determine the ages of males achieved greater accuracy, or that many of the indicators used in arriving at the ages of persons were heavily biased against women in some regions, e.g., the Northern and Upper Regions.

In most cases ages were estimated by 'trained' enumerators, and for this purpose the Census Report suggests that the results of P.E.S. may be considered to approximate more to the truth than those of the census.

However, in order to evaluate the source of discrepancies, and to provide a suitable corrective measure, it might be desirable that

Table 6.5.1
Age at Census identical with age at Post-Enumeration Survey (in single years).

Years of Age	Per cent. gross		Per. cent net	
	Males	Females	Males	Females
0	72.0	81.9	--	--
0-4	46.2	47.8	6.6	2.6
5-9	31.9	31.9	-0.1	-3.5
10-14	23.6	32.6	0.2	-15.3
15-19	23.7	30.8	0.3	9.2
20-24	31.5	24.0	10.9	21.8
25-29	23.6	12.8	14.0	0.8
30-34	20.1	14.1	11.7	-7.9
35-39	18.2	12.8	-9.4	-16.0
40-44	17.3	24.2	6.9	-1.6
45-49	19.3	11.9	4.3	-15.7
50-54	15.9	19.2	-11.5	-22.6
55-59	10.4	8.7	14.0	-26.3
60-64	23.5	17.2	-14.5	-34.8
65+	13.8	12.4	-29.2	-29.4
All ages	28.0	27.5	2.2	-3.7

Source: After Census, 1960, Vol. 5, Table 29.2.1 'a', p.389

Table 6.5.2
Consistency of age declaration in five-year age groups, 1960

Age Group	Per cent. gross		Per cent. net	
	Males	Females	Males	Females
0-4	87.2	85.2	12.8	14.8
5-9	73.3	73.3	2.1	-0.5
10-14	61.3	61.1	1.1	-10.1
15-19	65.2	61.6	2.6	13.0
20-24	51.5	55.9	14.7	23.9
25-29	47.9	42.1	13.2	2.7
30-34	42.1	36.5	14.0	-5.2
35-39	33.8	34.1	-18.8	-13.1
40-44	32.7	39.9	4.5	-1.6
45-49	35.9	22.7	3.5	-18.3
50-54	33.8	29.6	-5.3	-24.6
55-59	33.5	14.8	-12.5	-23.5
60-64	30.8	27.8	-15.0	-35.1
65+	24.1	25.2	-31.6	-31.2
All ages	57.7	55.9	3.5	-0.7

Source: After Census, 1960, Vol. 5, Table 29.2.1 'b', p. 391.

at the next census, it should be stated whether the age of the censee was determined by the enumerator or by the respondent.

The problems of using the results of the 1960 Population Census are complicated by the fact that there appears to be little agreement between the index of enumeration (Table 6.3) and concordance in age statements (Table 6.6); for example, whereas, according to the returns, the Northern and Upper Regions performed best on the former table, they nevertheless made the poorest showing on the latter.

It is recognized that the process of census evaluation is a continuing one, and the true position may not be known for some time; perhaps after the next census or even the one after that. A case for a comprehensive nation-wide system of vital statistics, e.g., of births, deaths, marriages, migrations, occupations, to provide a basis of comparison and correction in demographic trends was never more strongly made.

Such are the shortcomings of the figures returned at the 1960 census upon which population projects must be based (cf. Chapter 2). Table 6.7 gives the provisional population estimates made by the Ghana Census Office for 1960-1980, using alternative assumptions of (I) High Mortality Rates and (II) Low Mortality Rates, with (a) nil net immigration and (b) net immigration at an annual rate of 30,000 throughout the period 1960-1980. In the absence of accurate immigration data on persons of West African origin, who nevertheless form the bulk of such net immigration into the country, the estimate was obtained by reference to the number reported at the census of 1948. But the inadequacy of the latter source has already been demonstrated

Table 6.6

Agreement between ages declared at the census and those stated at the Post-Enumeration Survey in per cent. (reckoned in five-year groups), 1960.

Region	Per cent. of identical statements	
	Males	Females
Ghana	57.9	56.0
Western (and Central)	66.0	63.8
Accra Capital District	72.5	66.8
Eastern Region	59.1	54.6
Volta	59.4	58.6
Ashanti	62.6	62.1
Brong-Ahafo	54.4	53.4
Northern (with Upper)	38.2	36.9

Source: Based on data derived from Census, 1960, Vol. 5, Table 29.2.1 'd', p. 393.

Table 6.7

Projections (1960-80) of de facto Population at March, 1960 in Thousands.

	I High Mortality			II Low Mortality		
	(a)	(b) Immigration	(c)	(a)	(b) Immigration	(c)
1960	6,727	-	6,727	6,727	-	6,727
1965	7,510	160	7,670	7,670	160	7,830
1970	8,491	341	8,833	8,810	341	9,151
1975	9,753	540	10,296	10,289	543	10,832
1980	11,164	760	11,924	12,102	760	12,862
Annual growth rate per cent.						
5 years (1960-1965)	2.23		2.66			3.10
10 years (1965-1970)	2.37		2.79			3.15
15 years (1970-1975)	2.50		2.91			3.32
20 years (1960-1980)	2.60		2.85			3.31

Source: Ghana Census Office, Summary of Provisional Population Projections, 1960-1980 (unpublished).

in chapter 5.

According to the projection, the Ghana population could increase during the current decade, 1960-1970 within a range varying from 2.37 to 3.15. While the net minimum rate gives a reasonable lower limit, the upper ceiling could be raised if the flow of immigration continued at the rate experienced during the period, 1955-60, believed to have been around 50,000 per annum.

Even assuming that Ghana does not achieve a growth rate in economic development higher than the source regions of immigration, e.g., Upper Volta, Ivory Coast, Togo, Nigeria, Dahomey, the opportunities offered to these immigrants would depend on how the birth rate reacted to resource development, declining death rate, natural growth, etc.

For example, if the death rate declined while the birth rate remained high, the large increase in local sources of labour, (assuming no change in the quality and volume of labour required), might reduce opportunities offered to outsiders and force down the volume of immigration. On the other hand if many of the routine jobs are not mechanized, and if Ghanaians increase their aversion for such work, immigrants would find it profitable to enter, even if local labour was not being fully utilized (see Chapter 10). The effects of a decline in local birth rate might consequently be negated by such an influx.

Political factors are often mentioned as an important factor in immigration trends, but political decisions often only reflect economic evaluations. It has been suggested that if the productivity of local labour were raised, it might cut down on the country's dependence on

immigrant labour. This assumption is based on two false premises, first, that local labour at the present is being fully utilized, and second, that the people will require the same volume and quality of goods and services. A substantial increase in the per capita productivity of labour will result in a general upgrading of the level of living; this itself might induce an increase in immigration, to little or no disadvantage, or perhaps even to a better advantage as long as such immigration does not lead to a lowering of, but rather to an increase in, the net addition to the level of living (see Chapters 9 and 10).

Notice that whilst the difference between the lowest and the highest rates of increase is about 320,000 for 1965, it rises to 660,000 for 1970, and to approximately 1.7 million in 1980. Assuming even the rate of 2.7 per cent. per annum (which is close to the median rate), the population in 1970 should be about 8,780,000, but it has been shown that we should not press the application of the 1960 Census returns too far.

C H A P T E R 7

SPATIAL DISTRIBUTION OF POPULATION, 1960

The geographical distribution of population in Ghana must be seen in both its causative and dynamic aspects. Table 7.1.1 below describes the manner in which the population makes its living in each region. Notice that agriculture and related activities determine the distribution of about 60 per cent. of the entire labour force, of which cocoa farming accounts for a third. In contrast with the position in 1948, its influence is waning relatively to non-agricultural activities (cf. Tables 5.4.1 and 5.4.2). Contrast for example the percentage of persons occupied in mining with that dependent on commerce and services, etc. Favourable factors conditioning the distribution of population are those which facilitate the pursuit of economically rewarding activities. Most of the relevant factors are interdependent, viz.:

1. The presence of good agricultural soils, which is also a function of numerous physical factors (see Chapter 1). To these factors, management must be added.
2. The availability of opportunities for work in agriculture, including animal farming, fishing, hunting, forestry, and related activities.
3. The adequacy of water supply or a properly distributed rainfall. Inadequacy of water supply, or poor soil-water relationships seem to be the cause of most rural poverty, ill-health and depopulation; as for example, in most of South-eastern Ghana between Accra in the west, Ho in the North and Keta in the East; the Voltaian Basin and most of the Northern and Upper Regions of Ghana, e.g., Eastern and Western

Table 7.1.1

Percentage of persons employed in Major Industries, Ghana, 1960.

Industry Group	Ghana	Western (and Central) Region	Accra Capital District	Eastern Region	Volta Region	Ashanti	Brong-Ahafo	Northern (and Upper) Region
I. Agriculture, etc.	61.8	58.3	12.6	58.9	62.2	61.7	80.8	85.6
a. Cocoa farming	20.4	20.5	0.7	24.1	14.3	35.4	42.8	0.1
b. Other farming	39.2	32.8	7.2	33.0	44.5	26.2	38.0	85.1
c. Fishing	2.2	5.0	4.6	1.5	3.4	0.1	0.2	0.1
II. Manufacturing, Mining, etc.	15.0	16.3	27.3	18.2	15.0	15.5	8.7	6.0
i. Mining and Quarrying	1.9	3.9	0.7	3.6	0.1	1.9	0.0	0.0
ii. Manufacturing, etc.	9.1	8.7	12.1	11.3	11.9	10.1	6.0	4.1
iii. Construction	3.5	3.1	12.7	2.8	2.7	3.0	2.4	1.6
iv. Electricity	0.5	0.6	1.8	0.5	0.3	0.5	0.3	0.3
III Commerce, Transport, etc.	17.2	19.9	40.9	18.2	18.3	15.9	6.9	5.4
i. Commerce	14.5	15.9	34.8	15.7	16.8	13.2	5.3	4.9
ii. Transport and Communications	2.7	4.0	6.1	2.5	1.5	2.7	1.6	0.5
IV. Services	6.0	5.5	19.2	4.7	4.5	6.9	3.6	3.0
Total (of Four Major Groups)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: After Census, 1960, Vol. 4.

Dagomba, and Tumu. Too much water or water-logged conditions could also be inconvenient, e.g., the Ahanta-Nzima, and Amenfi-Awowin districts of the south-west.

4. The exploitation or development of useful minerals (including salts, clays, etc.), e.g., gold, diamonds, bauxite, manganese, water power resources. Map 1.3.

5. Accessibility to, or development, of, vehicular transport facilities (see Census 1960 The Atlas of Population Characteristics, 1964, p.6, Map 6). Notice the string of towns along the Cape Coast-Kumasi Road, Accra-Kumasi Road, and Accra-Takoradi Road; also the recent muschrooming of towns along the newly completed Accra-Cape Coast Road; also the influence of railways, and their connection with mineral exploitation, etc.

6. Administrative Decisions: for example the choice of Accra as the Chief Administrative City of Ghana in preference to Cape Coast, which was the old capital; the selection of New Tafo as the district administrative centre of the East Akim Abuakwa District instead of Kibi, the traditional capital; the choice of Tema in place of Ada as the new Port of Ghana; the removal of the Abakam, an immigrant fishing community near the University College of Cape Coast. Even the location of such institutions as universities, hospitals, etc., could profoundly influence the local distribution of population.

7. The availability of opportunities for work in secondary, tertiary and other urban-related activities.

8. Migration (Engmann, 1963, 1965a, 1965b; Birmingham et al., eds., 1968; also Chapter 9 and 10 below).

9. Historical, Political Factors: e.g., the movement of a section of the people of Old Juaben in Ashanti to their present location in New Juaben (Koforidua), in the Eastern Region (1876-78); the migration of the Gas from Ayawasu to their present place on the coast (Accra, etc.).

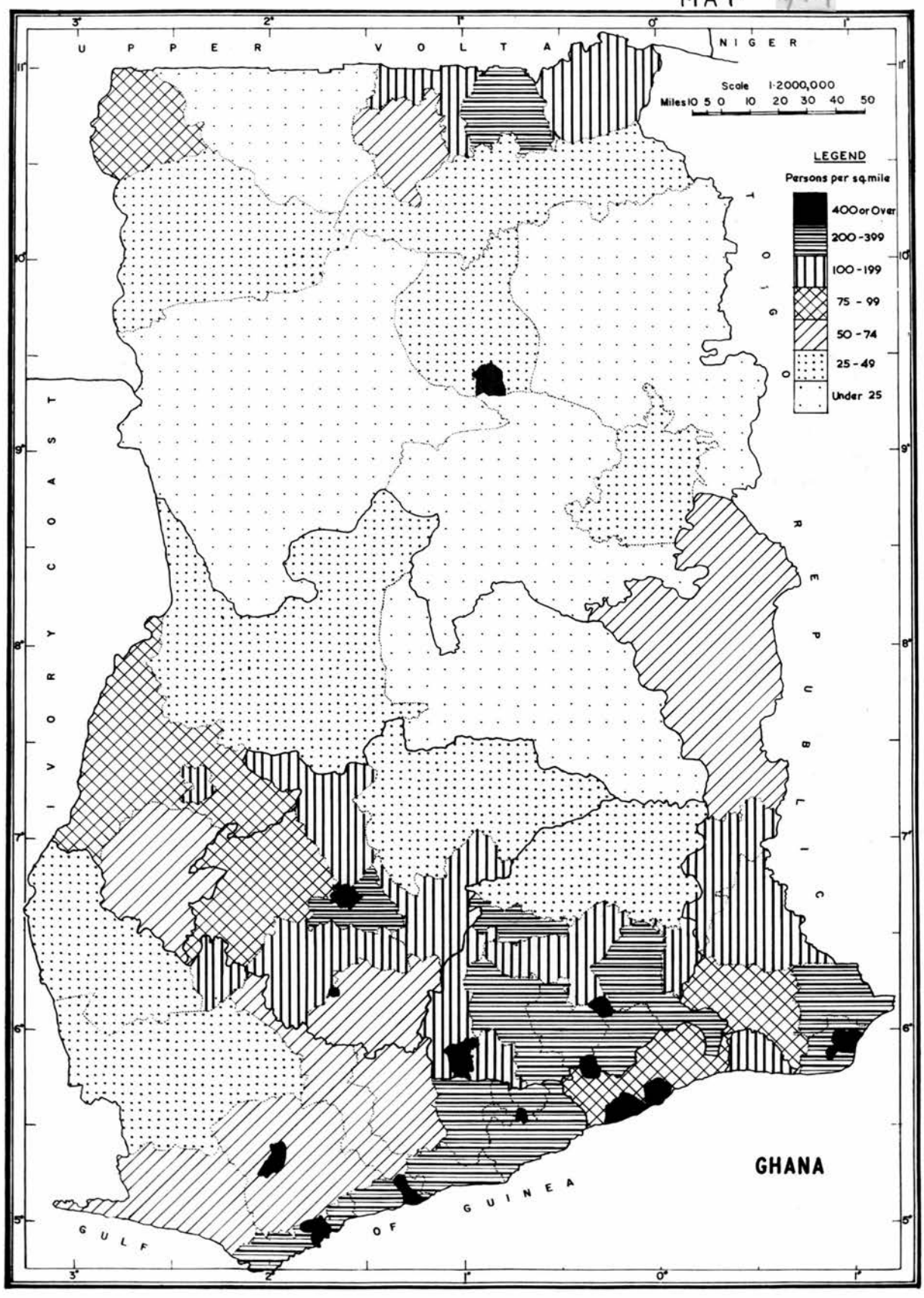
Items (1) to (4) may be considered primary forces, while (5) to (9) may be thought of as secondary factors.

In Ghana, the average number of people per square mile according to the 1960 Population Census Returns was 73[1] (or 30 per square milometre). Table 7.2. shows the 1964 distribution of population densities in the various countries and islands of Africa, arranged in a descending order (United Nations Statistical Yearbook, 1967 also the dates of the latest census or estimates. The question marks against Burundi, Dahomey, etc., indicate either that no census had ever been taken or that the census date is not known. It is probably true that a census has not been taken in any of those countries concerned for at least a period of 35 years. The figures are in square kilometres. It is evident that Ghana is one of the most densely peopled parts of Africa. The skewness in the distribution emphasies the extreme irregularity, and the fact that the largest countries tended to be the least populated; West Africa appears to be the most densely populated sub-region of Africa, even so, it is underpopulated. Ghana's immediate neighbours, i.e., Togo, Upper Volta, and Ivory Coast, have lower densities. These figures are probably not accurate; in mid-1964, that is about five years after the 1960

[1] To convert square miles to square kilometres, multiply the former by 2.590, and to reconvert, multiply the latter by 0.3061.

POPULATION DENSITY, 1960

MAP 97.1



census, Ghana's population was estimated at approximately 7.4 millions, or a total increase of 12 per cent.

Map 7.1 shows the distribution of population densities in 1960. Notice the generally high population densities along the sea-board, south of a line running from Axim in the west to Ho in the east; the very high rural densities, 100 to 200 per square mile in the north-eastern corner of the country, bounded on the south by the Gembaga scarps, and on the west by the Sisili River; also in the High Lawra Plateau district of the extreme north-western corner of Ghana. The high population densities in the cities, municipal and urban council areas are to be expected; high densities in the Eastern Region, except in the North Kwahu district; also in and around Kumasi and Brong-Ahafo South. Examine also Map 7.2.

Sparsely populated areas form a more or less continuous zone separating the high population density zones of the forest belt in the south from the densely populated areas in the north, and occupy the whole of the Voltaian Basin and most of the Tano Basin; note the relatively sparse population in the south-western corner of the country.

An analysis of the distribution of population densities in 1960 (Table 7.3) and other demographic variables shows that the former was closely associated with the distribution of urban population, and urban related activities such as manufacturing, commerce, education, Christianity, etc., and inversely with the distribution of agricultural labour force, fertility ratios, the practice of traditional religion and illiteracy. The table reveals that in general the overall relative distribution of population densities changed very little between 1948

and 1960. These general trends, however, conceal very significant local differences.

At the national level there is little relationship between the distribution of the labour force in cocoa production and population density (rho= -0.109).

In the Western and Central Regions, there appears to be a very significant inverse correlation between the distribution of population densities and that of cocoa farming (-0.771) and general agriculture (-0.725).

In the Eastern, Accra Capital, and Volta Regions also, the correlation between population density and cocoa farming is strongly inverse (-0.415); in Ashanti and Brong Ahafo, the correlation is inverse but not significant; and in the Northern Territories, where no cocoa is actually grown, the relationship between the two variables is positive and very significant (rho = 0.763). For a general treatment of population distributions in Ghana, please see Boateng (1960, pp. 58-196), Hilton (1960, pp.21-39), Grove (1963, pp.10-15), Engmann (1965a), Adams(1960, pp.146-174).

For the purpose of analysing the major influences in population distribution in Ghana, the country will be divided into four major areas, viz.,

1. The Western and Central Regions;
2. The Eastern and Volta Regions; and the Accra Capital District;
3. Ashanti and Brong-Ahafo Regions; and
4. Northern and Upper Regions (Census, 1960, Vol.1, Map facing p.xviii).

The reasons for these groupings are partly historical and administrative, partly geographical, but mainly for statistical

convenience (cf. Table 7.1.1). For example, at the time of the 1960 Census the Western Region and Central Regions were one administrative region called the Western Region, but the two were separated thereafter, and most of the returns therefore related to the combined region. Similarly, the Upper and Northern Regions were enumerated as one administrative region called the Northern Region. Prior to independence, Brong-Ahafo and Ashanti were administered under one region called Ashanti (see Census 1960, Atlas of Population Characteristics, 1964, p.2). Similarly, the present Accra Capital District and most of the Volta Region were administered with the Eastern Region.

1. Distribution of Population in the Western and Central Regions of Ghana, 1960

Although the combined area of the Western (area, 9494 square miles) and Central (area, 3656 square miles) Regions comprised only 14.3 per cent. of the total area of Ghana, it accounted for approximately 20.5 per cent. of the total population. Its overall population density per square mile was 105 as compared with nation's average of 73. The Central Region section was more densely populated (205 persons per square mile) than the larger Western Region section (66 per square mile); nonetheless the rate of population growth appeared to have been larger in the latter than in the former region. Some of the most densely peopled rural districts were found in the Central Region, e.g., Mfantsiman, Komenda, Asebu, Gomoa, Awutu and Effutu districts (Engmann, 1965a, Map 4), Boateng (1962); by contrast some of the most sparsely populated districts were found in the Western Region, e.g., Wassaw, Aowin, Fiase, Mpohow, Amenfi-Aowin where rural population

Table 7.3

Rank Co-efficient of Correlation between Population Density, 1960 and other Demographic Variables, Ghana, 1960

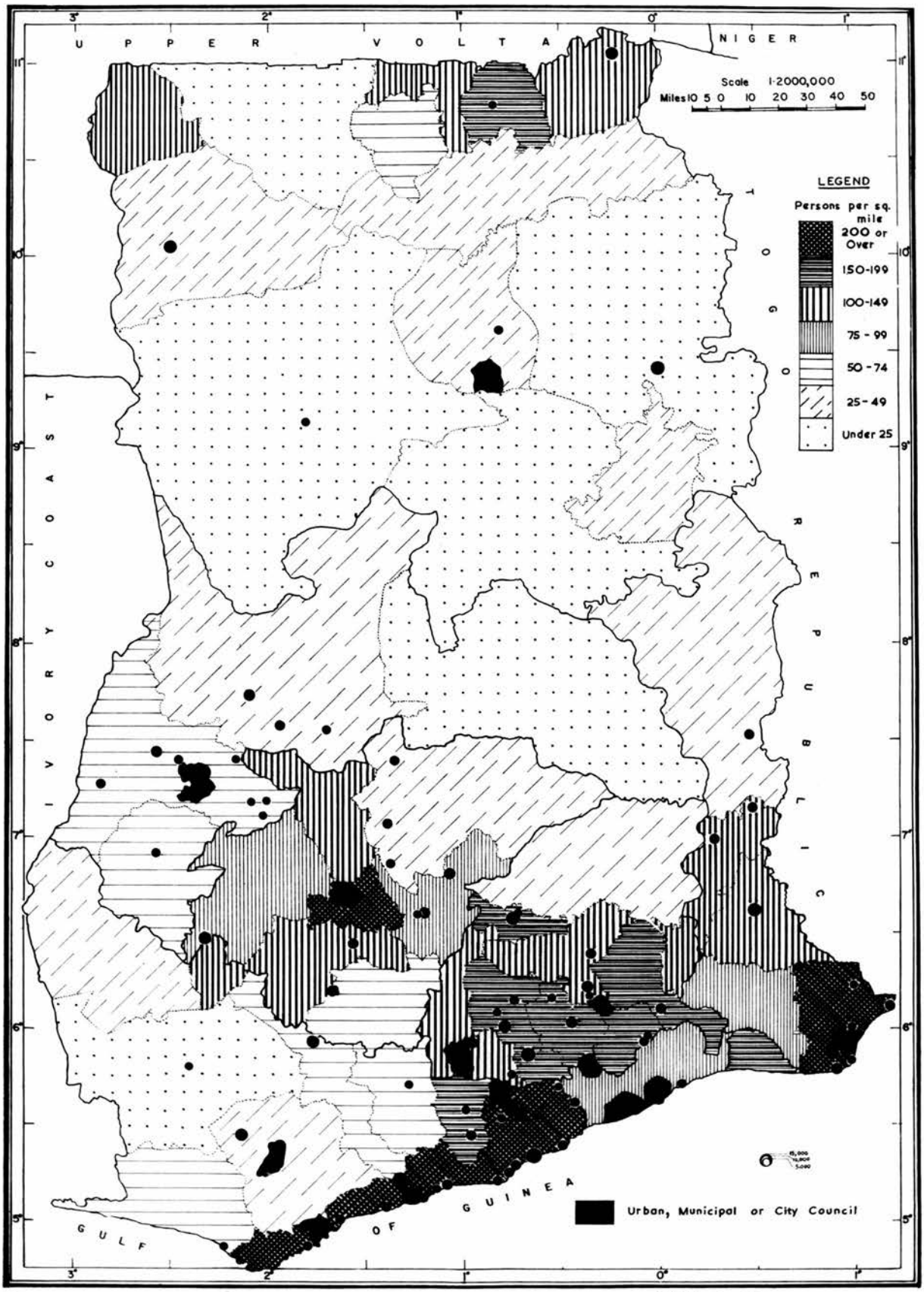
Variable	Correlation Co-efficient
Population Density, 1948	0.941
Population change, 1948-60	0.257
Per cent. of population in urban places (5,000 or more)	0.715
Per cent. of population born in another region of Ghana	0.258
School attendance of persons 6 years of age and over	0.582
Per cent. of labour force in agriculture	-0.788
Per cent. of labour force in manufacturing	0.687
Per cent. of labour force in commerce, etc.	0.792
Per cent. of labour force in services	0.599
Per cent. of population Christian	0.424
Per cent. of population in traditional religion	-0.497
Fertility ratios	-0.329

Note: Values above 0.24 and 0.33 are significant respectively at 95 and 99 per cent. levels (see Appendix III).

Source: Based on data derived from Census, 1960, Vols.1 to 4. The computer programme was written in Atlas and run at the Edinburgh University Regional Computer Centre.

I am indebted to Brian S. Duffield for allowing me to use his Program for the Spearman's Coefficient of Rank Correlation.

GHANA
RURAL POPULATION 1960



SOURCE: based on Census, 1960

MAP 7.2

densities were as low as 30 per square mile or less (Map 7.2).

With the exception of Agona, all the rural areas with very high population densities combined food-crop production with fishing, and grew little cocoa. By contrast districts with very low rural population densities devoted a sizeable proportion of their labour force to cocoa farming, the proportions being as high as 47 and 56 per cent. respectively in the Amenfi-Aowin and Sefwi-Wiawso districts (cf. Tables 9.4 to 9.7). The inverse relationship which appeared to exist between the density of rural population and the proportion of its labour force engaged in cocoa farming has already been demonstrated statistically (Table 7.3).

Mining activities appear to be relatively more important here, being carried on mainly in such places as Tarkwa and Abosso, and Nsuta, but they nonetheless account for a very small proportion of the labour force (Table 7.1.1). New agricultural developments are rubber plantations between Tarkwa and Axim, sugar cane in Komenda, citrus production at Asebu, etc.; major urban and industrial centres are Sekondi-Takoradi, also a port, and Cape Coast, an important centre for education (Table 10.5.1).

2. Population Distribution in the Eastern Region, Accra Capital District, and the Volta Regions, 1960

This area includes most of the Eastern Province and Trans-Volta Togoland Province prior to 1957 (Census, 1960, Vol.5, Map facing p. xviii); and although it accounted for only 18 per cent. of the total land surface in 1960, it contained over 35 per cent. of the total Ghana enumeration in 1960 and about 38 per cent. of the absolute recorded population increase between 1948 and 1960, making it the most

densely peopled and fastest growing part of Ghana; i.e., its density was 142 per square mile, as compared with the country-wide average of 73, and its rate of growth was 70 per cent. in comparison with the national average of 63 per cent. The significant factors in the distribution of population are the fast growing population centres of the Accra-Tema sector. Demographically, therefore, it is a region of interesting contrasts.

Table 7.1 shows the distribution of the labour force; notice the relatively low proportion of people engaged in agriculture in the Accra-Tema District; contrast this with the high proportion employed in commerce, etc., and services; also the significance of cocoa farming in the Eastern Region, and, of diamonds around Akwatia and Asamankeses, gold in Western Akim, Oda-Swedru, and West Akim Abuakwa districts, Ntronang, etc. In the Western Akim Abuakwa District alone there were approximately 8,500 persons engaged in mining, and in Western Akim District there were about 4,200; of the total only 16 in the former district, and 2 in the latter were in gold production.

Commercial activities engaged a sizeable proportion of the labour force in most districts, as for example, in Anlo South, Anlo North, and Keta Urban District where over 40 per cent. of the labour force were so engaged. In Anlo South, the entire labour force was made up of 12,900 males and 16,000 females; less than 500 of the males were engaged in commerce but 12,700 of the females were so engaged. This means that over 76 per cent. of the labour in commerce and related activities were female; however in actual commercial activities such as retailing, etc., women accounted for over 85 per cent. of the

labour force. In the Keta District, where 58 per cent. of the entire labour force were female, the male ratio of the labour force was 735, per 1,000 females. The female predominance in retailing, etc., is a common feature of the Ghanaian economy and, therefore, a high female ratio in the towns need not indicate emigration trends; it could mean a heavy net immigration of females, e.g., Nsawam and Koforidua where females outnumber the males among certain immigrant groups, e.g. Gas and Ewes.

Whatever the reasons for the female predominance in commercial activities, it is evident that in Ghana that industry is over-staffed; it could do with less than a third of its present labour force.

In the region under consideration, the density of population appeared to be directly related to population change (Table 7.4).

Table 7.4

Number of Population per square mile, and the Percentage Population Change between 1948 and 1960 in the Eastern Region, Accra Capital District, and Volta Regions

Region	Population Density	Population Increase per cent.
Accra Capital District	494	121.9
Eastern Region	142	64.0
Volta Region	98	56.7

Source: Based on data derived from Census, 1960.

A further analysis of the population and labour force distribution shows that the amount of labour force devoted to cocoa farming tended to be inversely related to rural population density; that is, the districts, where little or no cocoa was produced, had the highest

population densities, e.g., Ada, Anlo North and Anlo South. Compare these districts with Buem Krachi, Kwahu North and East Akim-Abuakwa Districts where about 40 per cent. or more of the labour force were returned as farming cocoa (Map 7.1).

3. Distribution of Population in Ashanti and Brong-Ahafo Regions, 1960

The combined area of Ashanti (9,417 square miles), and Brong-Ahafo (15,275 square miles) comprised 27 per cent. of the land surface of Ghana, and its total population of 1,696,053 accounted for 25 per cent. of the total enumeration in 1960. The average population density of 69 persons per square mile was only slightly lower than the national average of 73, but the recorded population increase of 105 per cent. appeared to suggest that the population more than doubled between 1948 and 1960. Immigration and cocoa farming have been credited for this large apparent (if misleading) rate of growth.

Field investigations I carried out between 1950 and 1952 in a number of places in Bekwai, Wenchi, Mampong, and Ejura districts suggested that omissions amounted to about 40 per cent., varying from over 70 per cent. in the inaccessible areas to about 30 per cent. in the roadside towns. Most small villages with a population of 100 persons or less were not enumerated. The duplication of place names appeared to have added to the confusion (cf. Census, 1960, Vol.5, p.376).

The overall density of population ranged from over 3,700 per square mile in Obuasi Urban Council to less than 40 in Brong-Ahafo North and Brong-Ahafo East Districts (Map 7.1);rural population densities varied from about 280 to the square mile in Kumasi South Local Council to 10 or less in Brong-Ahafo East. Dense rural

populations surrounded Kumasi City, e.g., in Kumasi South, Kumasi North, Kumasi West, and Kumasi East Local Councils. These high rural population densities were found in the high forest zone where most of the cocoa was grown and timber extracted (Map 7.2). Conditions for cultivating local foodstuffs, e.g., plantain, coco-yam, yams, casava, maize, etc., appeared to be satisfactory. All the important urban areas, e.g., Kumasi, Bekwai, etc., were found in this zone; also the mining centres of Obuasi, Konongo, etc. By contrast the sparsely peopled areas were associated with the savanna woodland vegetation in the Voltaian Basin. In general population densities fell away radially from Kumasi, but the density gradient appeared to be steeper northwards, where sudden changes in physical and cultural environments appeared to be the rule. For example, most of the population in Sekyere was concentrated in forested southern third of the district where densities ranged from 50 to 100 or more per square mile; similarly in Brong-Ahafo North, most of the population lived in the southern forested part. Brong-Ahafo East, which was covered almost completely with savanna vegetation and located almost entirely in the Voltaian Basin, was the most sparsely peopled district. Typical savanna zone towns, while not impressive, were Kintampo, Ejura, Bamboi, Kete-Krachi, etc.

When similar environmental conditions are considered, it seems that in the region under consideration, the rate of population growth between 1948 and 1960 and the density of rural population were inversely related (Table 7.5).

In the towns also a similar inverse relationship was found between population increase and population density. For example, Obuase with a

Table 7.5

Density of Rural Population, and Population Change between 1948 and 1960

District	Persons per square mile	Population increase per cent., 1948-60
Brong-Ahafo North	34	166.7
Brong-Ahafo Central	66	107.7
Kumasi North	117	90.0
Amansie	120	58.9
Kumasi South	279	53.9

Source: Based on data derived from Census, 1960.

higher population density made a smaller gain (62.9 per cent.), while Kumasi with a lower density of population reported a larger gain (166.5 per cent.). Furthermore, at the Regional level the same picture emerged. For example Ashanti, with three times the average number of persons per square mile as Brong-Ahafo, reported a gain of 98.4 per cent., while the latter more sparsely populated region recorded a gain of 138 per cent.. These differences may reflect varying degrees of omissions at the 1948 census.

See Table 7.1.1. In the area under consideration it appears that cocoa farming engaged more people than all other farming, forestry and fishing activities put together, and employed more people than any other industry: 48 per cent. of the overall labour force reported as cocoa farmers were returned for this area. Nonetheless, in spite of its importance, and perhaps because of its near universality, a statistical analysis of the data shows little connection between cocoa farming and rural population density.

Spatial analysis suggests that cocoa farming tended to be positively related to rural population density only up to a point, after which the relationship became inverse (see Table 7.6).

Table 7.6

Rural Population Densities, and Percentage of the Labour Force engaged in Cocoa farming

District	Persons per square mile	Per cent. labour force in cocoa production
Kumasi South	279	29.9
Kumasi North	117	40.6
Amansie	120	48.6
Kumasi East	98	50.9
Adansie Banka	63	52.6
Brong-Ahafo South	50	72.2

Source: Based on data derived from Census, 1960.

A similar inverse relationship was found at the regional level. For example, in Ashanti and Brong-Ahafo, cocoa farming accounted for about 35 and 43 per cent. of the total labour force respectively, but the population density in the former was 89 per square mile, and of the latter only 32.

It is often assumed that cocoa farming induces immigration of agricultural workers into the district in question, and by implication a rapid growth of population; but the connection between the two is not at all clear. True, an analysis of the census returns shows that there are four males to every one female cocoa farmer; but there is no indication that the male excess resulted from immigration of male cocoa farmers. If, for example, the indigenous females did not take to cocoa farming, such would be the case even if they outnumbered the males in the overall population. In a few cases, e.g., Brong-Ahafo South, an analysis of the place of birth of the population, and sex ratio of the total labour force, and the labour force in cocoa production suggests that there had been heavy net immigration generally; but it is not

clear what proportion of the immigrant workers went into cocoa farming as such. Data on place of birth, and length of residence of cocoa farmers would be of great value in identifying their migration habits.

A further analysis of the data shows that there was little association between the distribution of cocoa farmers and either long or short distance migration in the areas in question.

If there was a reservoir of unused labour in an area, the introduction of cocoa farming need not induce the immigration of cocoa farmers from outside (cf. Chapter 5). Nonetheless immigrants may come in and perform non-agricultural activities like building roads, houses and schools; commerce, trade, professional, administrative and technical jobs, etc. The recognition that migrants who go into a cocoa growing area do not necessarily engage themselves in cocoa farming is important.

The inverse relationship seen between the proportion of labour force engaged in cocoa farming and rural population densities was demonstrated also for other regions in the forest zone of Ghana. Boateng (1962, p.17) noted an apparent clash of interests between the two types of farming activities. The reasons are not quite clear, but it would seem that cocoa being essentially a money crop, imposes very strict limits on the minimum size of the economically viable farm unit, whereas food farming, on the other hand, probably does not impose such strict conditions, and therefore such farms are amenable to almost innumerable subdivisions.. Thus whereas in the old cocoa producing areas, e.g., the Eastern and Central Regions, the rural populations were already dense before the introduction of cocoa, not much land could be devoted to cocoa farming; by contrast, in the relatively empty

lands of Buem-Krachi, Kwahu North, Brong-Ahafo South and Central Districts, etc., the sparse populations permitted the establishment of larger farm units, limiting the land that could be given over to food-crops, and also the number of persons per square mile in the rural areas. Furthermore, cocoa, once established, needs much less labour than food-crops. The significance of this fact for labour demand and fertility rates is clear.

The inadequacy of food supplies in some of the old cocoa growing districts could be explained in the light of the above analysis; for example, at Maase (1960 population, 1663), a cocoa producing village near Tafo in the East Akim Abuakwa District, the local population make regular day-long trips to Asafo, and even Tafo (an urban centre) for their food supplies. This is an example of rural population purchasing their foodstuffs from the town.

There have been discussions as to the carrying capacity of the cocoa growing areas in terms of rural population (e.g. Stamp, 1938; Boateng, 1962, p.17; and Hunter, 1966). Such studies have suggested that with traditional techniques of agriculture, the optimum rural population density was probably between 130 and 150 per square mile. Hunter wished to establish the relationship between rural population density, agricultural land population-carrying capacity, and long distance migration. But migration is influenced by such factors as the standard of living of the persons involved, and other subjective considerations (Chapter 9). Besides, the investigations were based on total population, and no distinction was made between types of agriculture. What is needed is a device that will take into account the influences of all economic activities separately.

It is of interest to note nonetheless that an analysis of the 1960 census returns shows that in the rural districts where the proportion of the labour force engaged in cocoa farming was more than double the national average of 20.4 per cent. (i.e., 41 per cent. or more) the density of rural population was less than 130 per square mile; on the other hand, where this proportion was lower, as, for example, in Mfantsiman, Komenda, Eguafo, Edina and Frafra Districts, etc., the rural population densities were very high (Engmann, 1965a, p.57, Map 4). The use of reliable statistical techniques with good predictive value must await the returns of the 1970 population census (cf. Chapter 6).

Distribution of Population in the Northern and Upper Regions of Ghana, 1960

The Northern and Upper Regions of Ghana as already noted were combined into one area called the Northern Region at the time of the 1960 Census, but were separated thereafter. Their combined area comprised over 40 per cent. of Ghana, but accounted for only 19 per cent. of its total enumeration in 1960. In 1948, its share of the total population was 25.2 per cent. Thus not only did its population density of 34 per square mile make it the most sparsely peopled area in Ghana, but also its relative share of the total population appeared to have declined. The possibility of errors in the recorded rates of population growth must be kept in mind. For example, an examination of the age and sex structure, male ratio, migration rates, fertility rates and the structure of the labour force would suggest that most of the increases reported for Nanumba Local Council in 1960 probably resulted from more complete enumeration. There appeared to be an inverse

relationship between the density of population and the rate of population growth; for example, the less densely populated Northern Region reported larger gains than the more densely populated Upper Region (see Table 7.7).

At the local level also rural population density appeared to be inversely associated with the rate of population growth between 1948 and 1960 (rho = -0.785), birth rate (rho = -0.459), male ratio (rho = -0.684) and inter-regional migration rates (rho = -0.547); thus rural population densities appear to have varied inversely with nearly all the indicators of population increase.

Table 7.7

Per cent. of Area, Population Density, and Rate of Population Growth, (1948-1960), in the Northern and Upper Regions of Ghana, 1960

Region	Per cent. of area	Per cent. of population	Density per sq.ml.	Per cent. per year change
Upper	28	59	72	1.2
Northern	72	41	20	2.9

Source: Based on data derived from Census, 1960.

The population densities varied from just over 620 per square mile in Tamale Urban Council to less than 10 in Western Gonja (Map 7.1); there were very high densities in Frafra, Kusasi, Kassena-Nankanni in the north-eastern corner, and in Lawra in the north-west. The sparsely populated areas were more or less co-extensive with the Voltaian Basin. On the other hand the areas of very high population densities were underlain by pre-Cambrian rocks, metamorphosed lava, pyroclastic rocks, granites, and granodiorites; some basic instrusives such as gabbro,

dolorite, and epidiorite with better water-retaining qualities in an area where the annual rainfall is inadequate.

The map necessarily conceals some important local differences; there are some very marked changes in population densities at short distances in some areas. In Builsa, densities of over 200 per square mile occur in a belt aligned north-east from Sandema; in north-eastern Kassena-Nankanni, in an area of about 200 square miles in extent, densities exceed 250 per square mile; uninhabited country hugs the rivers which border Frafra; the Red Volta cuts a swathe through uninhabited country in this most densely peopled rural district in north-eastern Ghana, with the main settlements standing sometimes three to four miles back from the river; densities exceed 500 per square mile in Kulubiliga-Kuldaga water-shed into which already crowded area population moves from the exhausted riverine areas and around Bolgatanga; very high densities, about 400-450 per square mile, are found in the area between Builsa and Kassena-Nankanni. South of Tamne the land is almost vacant, especially near Morago and in Toende, and soil erosion appears to be severe on the steeper slopes to the Red Volta. Toende appears to have shown very large population decreases between 1931 and 1948.

In the Tumu district, an area of over 400 square miles along the Kulpawn is virtually uninhabited; much of the 600-700 square miles along the Sissili-Kanyanbia appear also vacant; areas along the Sissili in the north-east towards Kassena are very thinly peopled. Much of the Sissili valley is deserted and the top soil has virtually disappeared, and from such areas the population appear to be moving

to the relatively better soils along the water-shed, parts of which are already beginning to show signs of exhaustion (Hilton, 1966; cf. Hunter, 1966a).

Agriculture is still the predominant industry, employing over 85 per cent. of the labour force; in some places the proportion exceeds 90 per cent.; only in Tamale is the proportion of workers in farming less than 30 per cent.

The presence of almost vacant lands in close juxtaposition to very densely populated rural districts has always presented some problem of interpretation and no satisfactory reason seems to have been found. Slave-raiding in the past, diseases like sleeping sickness, cerebro-spinal meningitis and endemic onchocerciasis (which causes river blindness) have been named by Hilton (1960; 1966), Hunter (1966b); and others.

Hunter suggests a cyclic disease relationship for the Nangodi district, the now vacant riverine lands having resulted from a retreat of the population before the advancing, endemic, occular onchocerciasis. The incidence of blindness could affect adversely the fertility rates partly by its general effects on health, and mainly by its effects on the economy as a whole. For example, a blind man will not be able to migrate for better jobs in other parts of the country if he wishes to enhance his economic conditions; furthermore if this disablement strikes in the prime of life or before it, the victim in question is not likely to realize his or her full fertility potential. The practice of exagamous marriages common among most of the tribes of Northern and Upper Regions of Ghana, e.g., the Konkomba (Tait, 1961, pp.202-203), and Talensi (Fortes, 1945, p.47) would tend to place the infirm and the

less able at a distinct disadvantage, vis à vis, marriage, since for them opportunities for travelling and searching are limited.

The broad, gentle, and almost imperceptible slopes in this part of Ghana allow flood waters to spread widely to endanger crops and dwellings; drainage is poor in most places, and the concentration of the annual rains during about five months of the year, and the absence of effective soil conservation measures by the local farmers, heighten the danger from floods, sheet wash, and soil erosion. Since dispersed settlements are the rule, and every farmhouse is set in the middle of its farm in an area where neither fertilizers or manures are widely used, soil erosion and soil exhaustion would lead to a change (abandonment) of farm, and, of course, migration of the settlement or compound as well.

By contrast, soil exhaustion in the forest zone of Ghana, where nucleated villages are the rule, need not lead to an immediate migration of settlement or houses. Here farmers live in settlements which may be up to six miles away from the farms, and so the place of work and place of residence are separate and distinct. When the soil is exhausted in circumstances where manures are not widely applied, the farmers merely respond by turning the exhausted land over to nature for replenishment, and farm a new area. Thus while the farms may rotate in response to farming needs, the settlements by and large stay put. A model nucleated village may be seen as a settlement which marks the centre of a circle, whose radius is measured by the farthest distance the farmers have to travel to reach their farms (Boateng, 1962, p.17).

Ill-health and diseases of any kind such as are prevalent in this and other parts of the country reduce per capita labour productivity,

and may lead to poverty, ignorance, improper management of soils, ineffective human occupance, and soil deterioration, and be an important factor in migration of settlements and of population (Gold Coast, Medical Report, 1953, p.22). Nevertheless, the abandonment of the riverine tracts, or the desertion of areas which appear once to have carried dense populations is seen by the present writer more as a result of the traditional response to soil exhaustion, and inconvenient location. A further investigation is urged. The implications of this analysis for population decline in the Northern and Upper Regions of Ghana are clear (Map 6.1; Engmann, 1963, 1965a, p.53, Map 3).

Although it is not possible with our present techniques to assess its full extent, population decline appears to be probably one of the most significant geographic facts in the savanna woodlands of Northern Ghana. Its distribution and incidence are uneven; a statistical analysis suggests that the rate of population increase was directly and closely associated with fertility rates (rho = +0.653); the distribution of long distance or inter-regional migrants (rho = 0.684), the distribution of persons reported as cocoa farmers (rho = 0.798); and inversely with most of the indicators of population loss, e.g., per cent. of locally born population (rho = -890; Engmann, 1965a, Map 1), ethnic homogeneity (rho = -0.574), per cent. of labour force engaged in agriculture (rho = -0.727), and density per square mile of rural population (rho = -0.785), Map 7.2; (Engmann, 1965a, p.57, Map 4). See Appendix IV.

Because no cocoa is grown in the Northern and Upper Regions of Ghana, the distribution of workers reported as cocoa farmers is a

very useful guide to the long distance migration experiences of the population in question. Its inverse relationship with most of the indicators of population decline would seem to suggest that most of the migrants from the North-eastern part of Ghana, e.g., Frafra, Kusasi, do not go into cocoa farming; its positive correlation with the level of fertility suggests a strong connection between fertility levels and economic ability among the population concerned. Further work on this problem is urged.

In the foregoing analysis, the main economic and demographic influences in the distribution, change and density of population of Ghana in 1960 were identified. It was demonstrated, for example, that in Ghana both types of forces interact. The next three chapters are devoted to an analysis of the variations in fertility and migration trends because they are of the utmost geographic significance.

C H A P T E R 8

FERTILITY RATES IN GHANA FROM ABOUT 1840-50 TO 1960-70

A statistical analysis by means of the Spearman's co-efficient of rank correlation of the returns of the 1960 Population Census shows that in Ghana the level of fertility is one of the chief factors in population growth (Appendix III; Map 8.1 and Map 6.1). In Chapter 6, the distribution of population growth between 1948 and 1960 was discussed. In this chapter an historical summary of the results of observations and studies (including the author's) made of fertility trends in Ghana will be presented; also a detailed analysis of the geographical distribution of fertility rates derived from the 1960 census returns, and their relationship with other demographic characteristics, will be made. Although the demographic consequences of birth rates and fertility rates are in practice the same, a distinction will be made between the two concepts.

For the purpose of this analysis, three main periods may be noted, viz.:

1. The period from about 1840-50 to 1890.
2. The period from about 1891 to 1950 (that is, beginning from the year of the first official census to the year of the last census under the Gold Coast Administration).
3. The period from 1950 onwards.

The Period from about 1840-50 to 1890

It has already been shown in Chapter 2 that during the period in question such demographic data as were available were utterly unreliable. There was no system of recording and analysing vital

statistics, and most of the conclusions drawn about fertility levels were impressions. Kuczynski (1948, pp.446-532) presents a summary of the position from about 1850 to about 1931. Our knowledge of fertility conditions during the period derive mainly from official records, and the reports of the Ghana medical department (e.g., Gold Coast, Medical Report, 1945; ibid., 1953).

All too frequently, interpretations placed on the data on vital statistics were statistically untenable. For example, in the Gold Coast, Medical Report for 1953 (p.11) it was stated as follows:-

> "The number of births increased from 15878 in 1952 to 18181 in 1953, the increase being made up of 1136 African male births and 1187 African female births".

This is obviously misleading, because the registration of births were limited to the small number of urban areas, which then accounted for about 10 per cent. only of the over-all Ghana population; secondly, account was not taken of the fact that the populations of the urban areas were increasing much faster than the over-all population, not to speak of those of the rural areas; thirdly, registration of births in the areas in question had never been complete. Consequently any interpretation that fails to take account of these weaknesses is valueless. Note also the emphasis placed on the qualifying word African. It must not be concluded from the report referred to above that there were more female births than male: A binominal test shows that the difference was not statistically significant.

During the nineteenth century the belief was widely held among the administrative officers that fertility rates were generally high, but that polygamy was a factor in low fertility rates (Blue Book, 1850);

that abortion was practised by the poor, especially when a woman who was suckling became pregnant, in the belief that it might injure the baby at the breast; and because they were generally too poor to rear the child on "spoon meat". In neither case were data given to substantiate the impressions. On the contrary, Busia (in Lorimer, 1954, p.349) reported that deliberate limitation of fertility was not practised within marriage. Results of investigations into the effects of polygamy on fertility are not conclusive. In some cases polygamy might be shown to increase the fertility of women who otherwise might never have married. It has been shown that the mean age of persons, especially women in polygamous marriages, is significantly higher than in non-polygamous ones (Blanc, 1955, pp.12-24). Yet the ages of women at marriage and the duration of marriage do have a decided influence on the number of children that women could bear.

The Period from 1891 to 1950

At the turn of the 19th century official data, if incomplete, on population trends began to emerge. Provision was made during the period referred to for registration of births and deaths in certain towns whose total population comprised only about 10 per cent. of the country's total. Even in those limited cases the returns were unreliable, and conclusions drawn therefrom accordingly faulty. Between 1914 and 1918, for example, the birth rate at Accra (pop.20,000) was estimated at 36.5 per 1,000 persons living; that at Sekondi (pop. 12,000), "with a fair number of females" was placed at 5.7 per 1,000 persons living. The absurdity of the interpretation placed on these returns is too obvious to need further comments.

The Togaland Report for 1920-21 said that the women normally bore 6 children; but in the same report, it was stated that the birth rate was between 80 and 100 per thousand persons. This last figure is highly improbable; besides it does not accord with the previous estimate of 6 children per mother.

Between 1924 and 1944 investigations into the question of fertility were based on the hospitals and health centres; this meant that there were no independent reports apart from those originating from the Ghana medical department. Between 1924 and 1925, an investigation, carried out in the Koforidua district of all adult women who visited the infirmary for treatment, reported that on average each woman aged 40 years or more had 7.9 pregnancies, of which about 14 per cent. ended in miscarriages, and resulted in 6.8 births per woman; another inquiry made in 54 districts throughout the country in 1931, reported an average of 5.8 births per woman, the number ranging from 2.7 in the Volta River District to 7.9 in the Lawra District. No reason was given for the low birth rate in the former district; the reported figure of 4.5 births per woman for Koforidua on this occasion contradicted the previous figure of 6.8. In the Western Province of the Colony, about 2.2 per cent. of the women interviewed were reported barren, but medical officers in charge of the survey reported that they had the greatest difficulty in obtaining answers on this point. In the Kintampo district 25 per cent. of the women were reported barren. Nevertheless, the census officer (1931, Vol.1, pp.214-217) concluded that contemporary cultural conditions in the country were conducive to high birth rates; further, that they were high in the less advanced parts thereof (e.g., Eastern and Central Provinces of the

Colony). Kuczynski (pp.414-417) disagreed that culture had anything to do with the birth rates. The Chief Census Officer did not find anything odd in the fact that the birth rates were high in the poorer parts of the country where because of widespread poverty the inducement to abortion was high. Again the very low birth rates reported for such poor rural places as the Kintampo district were not explained. The report did not distinguish between still-births and infant mortality.

Such factors as malaria fever, tuberculosis, yaws, kwashiorkor, defective and poor diets, overcrowded conditions, bad drinking water, were said to have adverse effects on the birth rate (see for example, Gold Coast Medical Report, 1945, p.7). It was reported that infant mortality was very high and many surviving children were crippled and invalided for life. For further information on diseases and causes of death, see the Gold Coast Medical Reports (e.g., 1945, pp.7-8; 1953, Chapter 3).

One major criticism of the various investigations during the period in question was that the medical officers appeared to have questioned rather than interviewed their subjects; as a result the proper rapport appears to have been absent; another handicap was the fact that the investigations were associated with the hospitals, which did little to diminish the fears of the respondents.

The last major effort during the period in question to obtain a country-wide view of the fertility picture was made in 1948 within two weeks of the main census. I participated in it. Each participating assistant was supplied with a schedule with the instructions to ask

Table 8.1

Fertility of African Women: ratio of children born and of children surviving to numbers of women in quinary age groups and of children surviving to those born to the same group of women, 1948, Ghana.

Age Group	Children born per woman[1]	Children surviving per birth	Children surviving per woman
15-19	0.59	0.79	0.46
20-24	1.59	0.77	1.22
25-29	2.60	0.72	1.86
30-34	3.70	0.66	2.44
35-39	4.67	0.62	2.88
40-44	5.36	0.60	3.24
45-49	6.14	0.56	3.42
50-54	6.37	0.52	3.33
55-59	6.84	0.53	3.60
60-64	6.54	0.50	3.26
65+	6.67	0.49	3.30

Source: Based on data derived from Census, 1948, Table 29, p. 395.

1 a. Taking the average number of women straddling the age of menopause, i.e. 45-49 and 50-54, the average fertility rate would be 6.26. that is (6.14 + 6.37)/2; a gross reproduction rate of 3.13 (or 6.26/2); and a net reproduction rate of 1.689 (or 3.375 x 0.54).

b. Alternatively, taking the average of the number of all children of women past the child-bearing age, the average number of children born to each woman would be 6.6 or (6.37 + 6.84 + 6.54 + 6.67)/4, and a gross reproduction rate of 3.4 or (3.42 + 3.33 + 3.60 + 3.26)/4; and a net reproduction rate of 1.70.

c. If all women aged 15 years or more are considered together with their relative numbers of children, the average number of children per woman would be 3.6; and net reproduction rate of 1.11.
(See Shaul, 1946; also Blanc, 1955).

each girl or woman in each house or compound who was more than 15 years of age, how many children she had had, and how many of those children were still alive. For the purpose of this investigation, the enumeration areas were arranged in alphabetical order, each fortieth one being selected for the inquiry. It was expected that about 30,000 females would be included in the sample size, but in the end only 26,739 (or 89 per cent.) were actually reached. The cause of this discrepancy was not investigated. The question of age statements already discussed remained a major problem.

Table 8.1 shows the results of the investigation referred to, arranged in quinary age groups, the computed net reproduction rate was between 1 and 2. From the data obtained, the report concluded that the birth rate was about 43 per thousand, and the child mortality rate, about 120 to 140 per thousand live births. The fact that contemporary birth rates recorded in the limited registration areas had ranged between 30 and 40 per thousand persons living was used to justify the conclusion stated above. It was further stated that the birth rate was increasing. The fact that the registration of vital events had been incomplete all along and that it was just probably beginning to improve apparently escaped the investigators. The conclusion that the birth rate was about 43 per thousand was inconsistent with the objective fact that no less than 8.2 per cent. (cf. Census, 1948, Table 7) of the population returned at the 1948 census (p.43) were aged one year or less. The latter figure, considering the high mortality rates of infants, implied a birth rate of at least 80 to 100 per thousand persons living. This is not to say that one or the other was right.

The report in question mistakenly concluded that fertility levels were higher in the poor rural districts than in the more wealthy and civilised areas. But an examination by Table 8.2 contradicts this conclusion: indeed the Northern Territories which were the least developed recorded the lowest Gross Reproduction rate etc.

The conclusions drawn from the data in question may vary depending on the concept used. A full discussion of the problems of techniques is outside the scope of the present work but the following may be noted briefly (see Shaul, 1946); birth rate is the ratio between the number of births per year and the total number of the population in question; total birth rates include also still-births, but effective birth rates exclude the latter. Most of these rates reportedly fall between 10 to 15 and 50 to 60 per thousand persons living. The total population upon which the concept of birth rate is based includes also non-mothers and males.

The concept of fertility rate is an attempt to avoid some of the difficulties implied in the concept of the birth rate. It means the ratio of total births during any one year to the total number of women aged 15 to 44 years (or 15 to 49 years). These limits are arbitrary, for births may occur to females outside these limits. Nonetheless, an examination of the various demographic year books, and data from field surveys indicate that over 90 per cent. of the births in any one year occur to mothers aged between 15 and 44 years.

A distinction is often made between total fertility and effective fertility; the former includes still births, whilst the latter excludes such. Specific birth rates are those births which occur to

Table 8.2

Index of Fertility Rates, Gross Reproduction Rates and Survival Rates in the Three Administrative Regions of Ghana, 1948.

Region	Total number of children born to each woman before menopause (Index:100)	Gross reproduction rate (Index:100)	Survival rate (Index:100)
N. Territories	100.0	100.0	100.0
Ashanti	110.0	138.5	126.4
Colony	100.8	128.3	125.5
Ghana, overall	102.1	121.0	118.7

Source: Based on data derived from Census, 1948, Table 29, p. 395.

Table 8.3

Fertility of Women in the Rural Districts of the Central Region of Ghana. Ratio of children born, and of children surviving to numbers in quinquennial cohorts, and of children surviving to those born to the same cohort, 1964-66

Age cohort	Children born per woman (a)	Children surviving per birth (b)	Children surviving per woman (ab)
15-19	0.47	0.81	0.38
20-24	2.16	0.76	1.64
25-29	4.92	0.68	3.20
30-34	5.70	0.61	3.50
35-39	6.96	0.65	4.52
40-44	7.91	0.62	4.90
45-49	7.93	0.59	4.70
50-54	7.30	0.57	4.16
55-59	7.95	0.56	4.45
60-64	7.80	0.52	4.06
65+	7.60	0.51	3.90

Source: Field Survey by author (1964-1966)

See Table 8.1 footnotes.

See also SHAUL, J.R.H., 'Derivation of Total Fertility, Gross Reproduction Rates and Net Reproduction Rates from Census Statistics of Marriage Fertility', Journal of Statistical Society, Vol 59, Part iii, 1946.

females at specified ages. An analysis of the age-specific birth rates suggests that births start slowly among females approximately between the ages of 12 and 15, rise rapidly with age, and reach a maximum somewhere between ages 20 and 30, whence they taper off rapidly until the age of 50 or more. Exceptions are not uncommon.

The gross reproduction rate indicates the extent to which a generation replaces itself by its descendants (i.e., integral replacement; replacement with surplus; incomplete replacement).[1] It is assumed that with integral replacement, the population concerned will exactly replace itself in a generation; and that the population would double in a generation if the reproduction rate were 2. The reproduction rate is determined on the basis of a generation of 1,000 live female births; the number of females (also live births) that will be born to them during their reproduction period. If deaths among the cohorts in question are taken into account, the rate derived is the net reproduction rate; the gross and net reproduction rates have each a different significance. It is believed that the former measures the population's potential for increase, while the latter measures its intrinsic fertility; both, however, indicate the number of female children that each woman has borne or will bear. The concept is based on a very limited assumption. Consequently, its value lies not so much in its application in practice, but as a demographic model.

[1] Starting from a net replacement rate of R, Alfred Lotka has defined the rate of natural increase of the female population r, so that $R = (1+r)^T$ where T is the average length of the female generation (the average age of females at birth of a daughter).

It assumes, for example, a closed population where there are no immigrations or emigrations. Its practical weakness lies in the fact that it might be difficult to follow-up all the members of the particular cohort for close investigation. Besides females frequently change their names upon marriage, which would make follow-ups in the case of the migrants very difficult. Furthermore, if they emigrate, they are removed from the geographical area in question, and therefore their fertility characteristics will not be relevant to the specific population's capacity to grow. The female generation of from 25 to 30 years is too long for the results of such investigations to be of immediate practical value to planners. It assumes also that every female of child-bearing age will marry.

For the reasons just set out the author suggests that to ascertain the fertility pattern of the population in Ghana, a regular survey of all children born during one year should be taken over a period of time until a comprehensive and effective system of vital registration is established throughout the country.

The Period from 1950 onwards

During the period referred to private individuals showed interest in the question of fertility levels in Ghana, and therefore provided an independent evaluation of the official reports. Lorimer (1954) in his book entitled Culture and Human Fertility: A Study of the Relation of Cultural Conditions to Fertility in non-Industrial and Transitional Societies, published two contributions by Shiella Mallett and Busia. Shiella Mallett studied the fertility characteristics of the women of Agogo, a town in Ashanti, and reported a net reproduction rate of between

2 and 3 (pp.325-339); also that the high fertility rate resulted from the high valuation placed on offspring by the people and the institutions which made it not only desirable but also praiseworthy for a woman to bear children throughout her procreative years (p.319).

Busia (see Lorimer, 1954, pp.343-349) in his study of Some Aspects of the Relation of Social Conditions in Human Fertility in the Gold Coast, reported that on the average each woman bore 7 children or more during her procreative years; that fertility rate in the rural areas (7.3 children per woman) was higher than in the small towns (7.2 children per woman); and the fertility rate in the small towns was also higher than in the large urban areas (7.0 children per woman). He noted a marked trend towards postponement of marriage among the educated members of the Ghanaian community, and among the city dwellers as compared with those in the rural areas; also a tendency towards declining fertility (p.349). His other important conclusion that limitation of fertility was not practised within marriage has already been noted.

Thus the investigations conducted during the 1950-60 decade reported high fertility rates. Yet it would seem that the demographers were not sufficiently aware of the reports of the fertility surveys of 1931 and 1948, discussed above.

The Population Census of 1960 stimulated renewed interest in the problems of fertility and population growth, partly because the reported growth rate of the population was beyond all expectations. During the present decade, a number of scholars, for example, Addo (1964), Gaisie (1964), Caldwell (1965-1968), and the present writer have carried out

field investigations into the problem of fertility levels (see Table 8.3) and all have reported high fertility rates. Caldwell (1965) reported an average of 7.4 births per woman, and little or no evidence of fertility differential by social class. But the students of the University of Ghana whom he used as subjects were not drawn from a special social class, although in the Ghanaian context, their training would put them in such a class. As Dumont (1956, p.73) puts it, "For most African children in town and country alike, school represents above all a means of entering the élite class."

To ascertain whether or not there was any difference in fertility patterns according to social class or profession, the large number of civil servants, administrative and professional class in and around Accra would have been more appropriate subjects. In making use of these one should remember that most of them are not more than one generation remote from illiteracy. The traditional ruling classes were not remarkable for their enthusiasm for formal, let alone higher education; the lack of educated peasant élite has also been noted by Dumont (1956, p.76). However, it should be possible to ascertain the future fertility characteristics of those currently receiving higher education by asking them to state their concept of a reasonable family size.

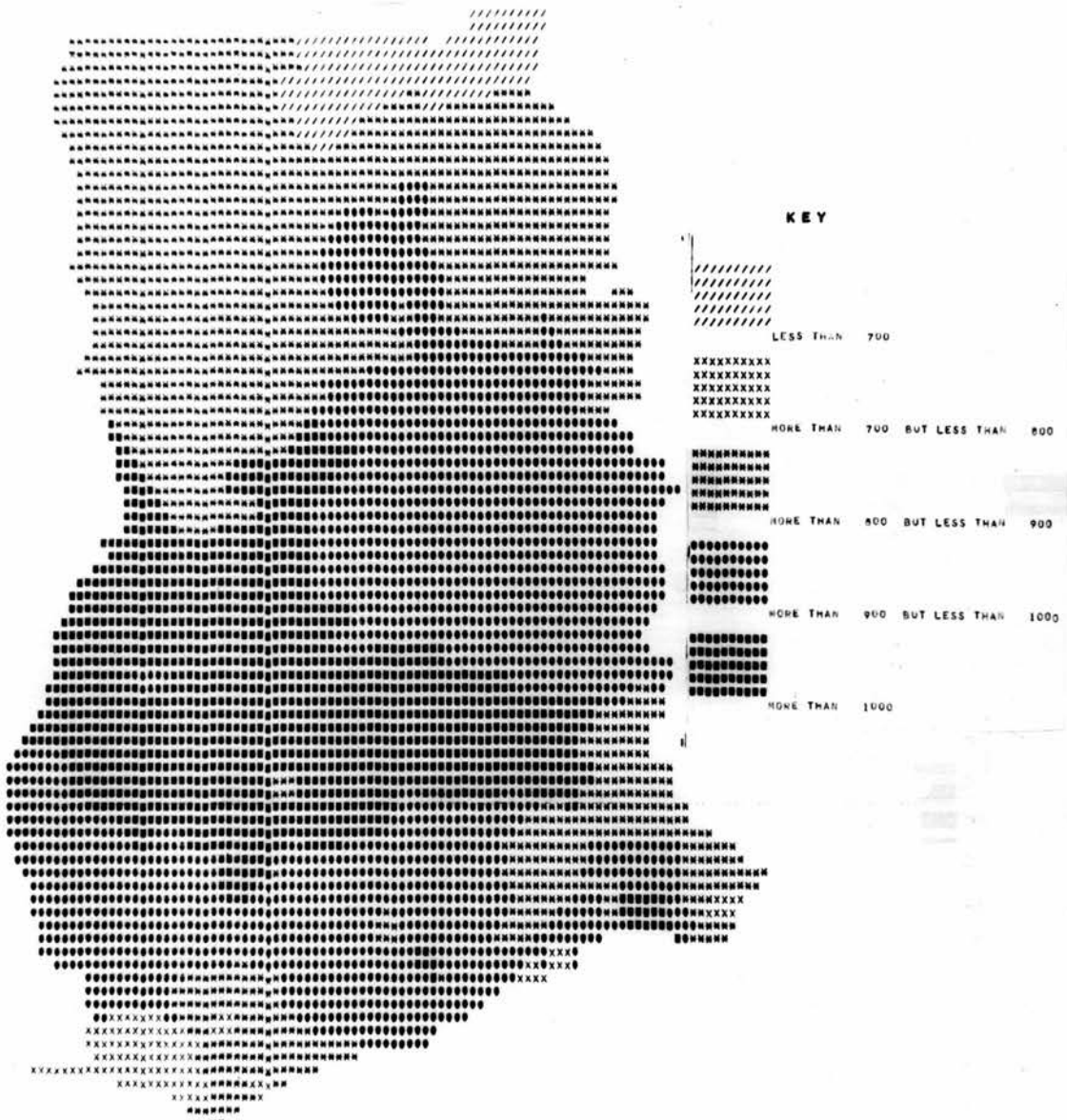
In another investigation, Caldwell (1967b), reported that he saw no evidence of fertility decline. This contradicted Busia's (1954) findings reported earlier. The weakness in Caldwell's assumptions was that in asking persons how many children their parents had had he was in fact investigating the fertility pattern of a previous generation.

During the period in question both official observers and field investigators stressed culture as the major factor in fertility levels. This is misleading. If for example it is stated that educated Ghanaians postpone marriage or have smaller families, or that rural communities or warring peoples put a high valuation on offspring in circumstances where there were no provisions for social security; or if the birth rate in a district declined because persons of procreative ages emigrated to seek jobs elsewhere, this, in the ultimate analysis, could be explained in economic terms.

Table 8.3 shows the results of a fertility survey conducted by the present writer between 1964 and 1966 with the assistance of students of the University College of Cape Coast. Twelve representative localities, which included farming and fishing communities, each with a total population of between 2,000 and 3,000, were covered in the survey.

For the purpose of the survey a sample size of 25 per cent. was used, drawn by means of a table of Random Sampling Digits (cf. Mosteller, et al., 1961, p.306). The results showed that in the rural districts of the Central Region of Ghana, each woman, during her reproduction period, bore between 7 and 8 children (i.e., 7.64); the gross and net reproduction rates were respectively 4.4 and 2.2. The survey covered approximately 2,200 females aged 15 years and over, of whom about 25 per cent. were aged 45 years or more. The questionnaire enquired about children who died at, or soon after birth, but it was quite probable that many of the results also included still-births. About 2 to 3 per cent. of the respondents had never had any children. There

NUMBER OF CHILDREN PER 1,000
WOMEN AGED 15-44 YEARS



MAP 8.1

SOURCE: based on data derived from Census, 1960
and drawn by computer by author.

appeared to be no significant improvement in the survival rate as compared with 1948 (cf. Table 8.1).

Geographical Distribution of Fertility Rates in Ghana, 1960

On the evidence derived from the returns of the 1960 Census, and with the aid of reverse-survival and other techniques, the Ghana Census Office estimated a birth rate of between 47.3 and 49.6 for the period 1960-1970. Comparable estimates for the various census districts and localities are not available. The fertility rate will be used instead. One shortcoming of this method is that in Ghana children do not always live where their mothers are; some working mothers leave their children with their grandparents who may be in either an urban or a rural district; another weakness is that both dead mothers who had had children, and mothers of dead children, are excluded.

An analysis of the census returns shows that the overall fertility rate for Ghana was 886 per 1,000 females aged 15 to 44 years. Map 8.1 suggests that the values were very high in Ashanti, Brong-Ahafo, the Central and Eastern Regions; these included some of the most prosperous parts of Ghana. By contrast, the fertility levels were very low in the Northern and Upper Regions; these included some of the poorest rural districts and localities; the rates for Kusasi, Nankanni, Builsa and Frafra Districts of the north-eastern sector of Ghana were all more than minus two standard deviations below the mean, and were lower than those of any urban area, e.g., Tema, Accra, Kumasi, Sekondi Takoradi (cf. Table 8.2). The fertility rates in the urban areas were moderate.

Thus there was no evidence that high birth rates in Ghana were

characteristic of poor rural districts, or that low fertility levels prevailed only in the more prosperous districts. Furthermore, culture in the sense applied by anthropologists and sociologists did not seem to be the chief factor in fertility differentials in Ghana.

The Motherhood Replacement Rate is another indicator of fertility levels and population growth potential. It measures the extent to which present mothers (i.e., females aged 15-44) are being replaced by potential mothers. This is achieved by comparing the number of females aged 10 to 39 years with those aged 15 to 44 years; each group spans thirty years. Because of the increasing risk of death associated with advancing age, etc., the total number entering upon the reproductive span must far outnumber those who are about to retire therefrom (i.e., those aged 40-44). A study of the census returns shows that in Ghana there were 323,460 females of the former group, and 143,572 of the latter; the latter equals in fact less than half of the former. The concept of motherhood replacement rates assumes that every female of child-bearing age would fully realise her natural fecundity.

Table 8.4 relates the fertility rates in each region with its motherhood replacement rates (cf. Table 8.2). The values are high in Ashanti, Accra Capital District and the Eastern Region, and low in the Northern and Upper Regions; the rates in the last two administrative regions are in fact less than one-half of the national average. In Frafra, for example, the rate is less than one-fifth of one per cent. (0.191 per cent). The indications are that in most of the Northern and Upper Regions of Ghana, especially Frafra, Builsa, Kusasi, Kassena-Nankanni, mothers are not being adequately replaced

(cf. Table 8.2); if this trend continues the birth rates will fall and the population will decrease (See Fig.10.2.2).

Table 8.4

Fertility Ratios, and Motherhood Replacement Rates, according to Administrative Regions, Ghana, 1960

Region	Fertility rates per 1,000 females aged 15-44 years	Motherhood replacement rates per cent.
Ghana	886	12.0
Accra C.D.	779	15.5
Ashanti	1,006	15.3
Eastern	924	15.0
Volta	865	14.0
Brong-Ahafo	1,017	14.0
Western (and Central)	903	12.2
Northern (and Upper)	756	5.0

Source: based on data derived from Census, 1960, Vol.3.

While the replacement rates are high in those districts which enjoy heavy net immigration, they are low in those areas which suffer from heavy net emigration, the men-folk emigrate and leave their women-folk behind; this has been used to explain the low birth rates in parts of the Upper Region of Ghana (cf. Cladwell, 1967b). The indications are that young and potential mothers also join the migration stream: they go where they are wanted. A further analysis of the census returns shows that in most of the Northern and Upper Regions, the low fertility rates result partly from inadequate replacement of mothers, and not from the shortage of males. The very close and significant correlation between the replacement rate of mothers, migration rates and population growth rates justifies the above conclusion.

A statistical analysis of the 1960 census returns by means of

Spearman's rank co-efficient of correlation shows that the distribution of fertility rates correlates positively with the percentage of the labour force engaged in agriculture (+0.243), the density per square mile of rural population (+0.263) and the rate of population growth between 1948 and 1960 (0.257). On the other hand it correlates inversely with the percentage of the labour force engaged in services (-0.396), and the density per square mile of total population (-0.329). See also Appendix III.

The inverse correlation between fertility rates and the density of total population is mainly because of the fact that the towns where fertility rates are generally low have higher population densities than the rural districts where they tend to be very high. The analysis also shows that farmers have more children than persons employed in services; as the majority of the rural population are farmers and persons engaged in services tend to concentrate in the towns, it is not difficult to understand why the fertility rates in the towns are lower than those in the rural districts. The influence of the economic factor, or the standard of living on fertility patterns is clear (cf. Table 7.3): given the same standard of living, the persons with more means will have more children than the one with less. What seems to differentiate most between say the subsistence farmer and the urban civil servant is the level of aspirations both for himself and his children.

The evidence from the Census Report seems to indicate a fertility differentiation according to occupation so that persons in the primary industries e.g., agriculture and fishing, have more children than

those in the tertiary industries, e.g., services (cf. Table 10.14.1).

It will be shown in chapter 10 that when the population is standardized according to the place of birth, migrants (foreign, long- and short-distance) are only half (or less) as fertile as the over-all population; or a third (or less) as the locally born (see Table 10.6.1). Also that the majority of the migrant population pursue non-agricultural and tertiary occupations, whilst the reverse is the case with the locally born.

Note also the following associations of demographic characteristics:

Migration-Non-agricultural occupations-urban residence-low fertility rates; and

Non-migration-agricultural occupations-rural residence-high fertility rates.

The reasons for these associations will be clear in chapter 10.

Summary

From a study of official records, census reports, maps and the results of field investigations from about 1850, to the present decade, it was shown that the fertility rate in Ghana was very high; if such high rates were maintained, the population would double in a generation or less.

Fertility levels varied from district to district, but there was no evidence that high fertility rates were characteristic of poor rural areas; or low rates of prosperous ones: the birth rates in, for example, the Upper Region of Ghana were shown to be falling behind those of the rest of the country (cf. Van de Walle, 1965; Martin, 1953). Also the cultural explanation of fertility differences was shown to be

misleading or inadequate.

One major handicap in the study of fertility levels during the period in question was the absence of a comprehensive system of registering and analysing births; the mistaken interpretation frequently placed on the statistical returns added to the difficulty To overcome these weaknesses, the immediate establishment and implementation of a comprehensive system of registration of vital events in all localities was urged; also a regular annual survey of all births which took place during the preceding year must be carried out to supplement the Population Register.

Finally, in view of the rapidly growing population, immediate steps must be taken to intensify, increase and diversify agricultural production.

CHAPTER 9

MIGRATION OF POPULATION WITHIN GHANA UP TO 1948

Migration of population is one of the chief components of population change and distribution, and if the interests of the people of Ghana are to be rationally and consistently pursued, its basic character must be analysed and understood. It refelects geographical differences in the distribution and development of resources and equalizes the population pressure throughout the inter-related regions.

Population pressure is sometimes defined as the intensity of the competitive struggle going on within the limits of any population; given the same resources, the intensity of the pressure appears to be directly related to the size of the population per unit area, and the gap between their scale of living and the standard of living. The scale of living may be defined as the actual or achieved per capita flow of goods and services produced and consumed by the members of the population in question in some standardized unit of time, e.g., one year. The standard of living, on the other hand, refers to the level of living to which the members of the population collectively or individually aspire. The former is an actual achievement, but the latter is a goal; the desired, or what members consider decent and appropriate to them. National Development Plans and Constitutions frequently reflect such collective goals. The standard of living will be a subject of continuing debate, definition and reappraisal and there will always be a gap between it and the level of living. Such a gap may be called the index of dissatisfaction or restlessness. Mathematically, its value will range between 0 and 1, or 0 and 100 per

cent. In practice, however, since people are never completely satisfied, it can never be unity or 100 per cent.

Levels of living can be assessed by means of carefully structured questionnaire, field observation and measurement, but the standard of living is much less amenable to quantification since it is largely idealistic, vague, subjective, even illusory; however, it may be evaluated by carefully standardized questionnaire which stresses future aspirations rather than present achievements. For example, people may be asked to state what they wish to become or achieve in five, ten or fifteen years' time; the kind of life they see for the general public, etc. Answers to such questions will vary from place to place, from time to time, and will depend on prevailing circumstances and past experiences. The postulations in the Ghana Seven Year Development Plan, for example, represent the planners' mental image of Ghana at the end of the period in question. Other examples of the desire for a new standard of living are when parents move from one place to another so as to assure good education for their children; or when a group of people emigrate to seek freedom of worship, or to escape from political persecution.

Men struggle to close the gap between the level of living and the standard of living. This may be achieved either by raising the level of living or by lowering the standard of living, or, usually, by a combination of both. Competition reflects the basic force which actuates the people to utilize the natural resources to utmost advantage, and thereby achieve the highest possible scale of living within the limits set by the resources as currently appraised, and the

level of the technical and industrial arts. Nonetheless, people may be forced to lower their level of living where the resources are being utilised as effectively as possible, given present techniques and competenece in them, and the gap between the scale and standard of living continues to widen. The question as to whether people will willingly accept a diminution of their scale of living is beyond the scope of this work.

There is a mistaken assumption against which Swinburne (1924, p.59) warns that pressure of population is limited only to large and increasing populations (cf. Tongu and Mfantsiman districts, 1960). On the contrary he argues that pressure is equally likely in increasing as in declining populations, or in densely-peopled as in thinly-peopled areas. However, he noted that, "The pressure of the population tending to increase may be less than the stress tending to keep it down" (Swinburne, 1924, loc. cit.).

Control of population size is assumed to be a common and necessary technique for removing the discrepancy between the scale of living and the standard of living. Furthermore, if the population in question is to maintain a scale of living appreciably above the level of mere subsistence, population size must be regulated so as to approach the optimum, i.e., that size of the population, given the natural resources and the state of the industrial arts which maximizes the scale of living. A population larger or smaller than the optimum size would result in a lower scale of living; the optimum is smaller than the maximum size, the latter represents an imbalance between size of population and economic resources, so that the scale of living hovers

Correction of pagination

For pp. 171,172,173 onwards read
161,162,163 onwards.

around the bare subsistence level.

In some poor rural districts of Ghana, the population is very dense, and the level of agricultural productivity is such that one man is capable of producing only enough for himself and about a tenth of another persons's needs. That is to say, about 10 persons produce only enough for 11, including themselves. There is evidence of heavy net emigration from these areas, e.g., Frafra, Ada, Mfantsiman, Nzima, Kumasi South. If per capita productivity remains the same, it is doubtful whether emigration will result in raising the level of living of the remaining population; it might even increase the population pressure (cf. Swinburne, loc. cit.). What seems to be happening is that the more productive elements of the population emigrate and thus further reduce the per capita productivity of labour. It may be argued that they remit money back home, but since these people are usually unskilled and lowly paid, it is doubtful whether the amount they remit is enough to balance the loss of their labour in the local areas (Engmann, 1963). This is not an argument against migration: it argues for upgrading the skills and productivity of the migrant labour.

Migration depends on, and is closely associated with, spatial mobility, which itself involves both physical and psychological facts. Any improvement in the means of transportation is likely to improve mobility of the individual and weaken his habitual attachment to his hearth; improvements in communications bring him into greater knowledge of places and widen his area of contact, even without actual physical contact. Thus a wider choice of means and destinations becomes available. In a model situation, population pressure creates in

people a readiness to move, the greater the pressure, the greater the restlessness and the greater the mobility. When mobility is associated with readiness to move, the expectation that a change of habitat will enhance one's chances of closing the gap between the level and the standard of living may result in migration, hence the concept that migration is the result of the opposition between two forces, i.e., push and pull.

Sometimes human interference prevents the free operation of the pull and push forces, e.g., frontier restrictions and immigration laws. During the first three decades of the present century heavy net immigrations from Ivory Coast, Upper Volta, Togo, Niger, Mali, etc., were reported. Restrictions imposed by the French authorities after the Second World War appear to have reduced this current considerably (the Gold Coast Handbook, 1928, pp.77-78).

At other times, however, human intervention operates in the opposite direction to stimulate more migration as, for example, when the Gold Coast Government brought in a large number of Nigerians to help with the construction of the Gold Coast Railways between 1900 and 1930, or when the Workers' Brigade were sent to farm in the North.

The two sets of forces need not operate in opposition in practice: they may co-operate to produce a stronger tide in one direction, so that while the push forces in Frafra, Ada, Tongu or Mfantsiman are loosening people's moorings to their hearths, the attraction in Kumasi, or Tema, or Takoradi may assist in tearing them therefrom.

Since, in practice, there will always be a gap between the level of living and the standard of living (i.e., an index of dissatisfaction or restlessness), the crucial thing that will determine

whether migration will take place is the level of tolerance or resilience of the individuals concerned: some people by nature, outlook and background can endure a larger measure of privation than others. But the degree of privation or wants tolerance that is desirable is debatable.

Some people may avoid physical migration by vertical migration or mobility; that is, through self-improvement or by increasing their productivity per unit of time, or by farming a larger area. But the difficulty associated with vertical mobility is directly related to the intensity of the competitive struggle; frequently it is this very dearth of, or restricted, opportunities for vertical mobility that forces some to emigrate.

Mobility may develop in one of two ways, (1) when the scale of living declines as a result of soil exhaustion, or deterioration in climate, or an unfavourable trade balance or an alteration in space relations. For example, until the beginning of the 15th century, trade, commerce and culture in West Africa looked northwards to the Mediterranean; and so Kano, Timbuktu, etc., in the heart of the savanna zone developed into important centres of commerce and culture and net migration then was from South to North. When regular contacts by sea with Europe were established, the orientation of trade changed from north to south, and the coastal towns and ports grew in importance, e.g., Accra, Abijan, Conakry, Dakar, Lagos. Subsequent development in modern means of transportation, i.e., railways, roads and air, emphasized the new pattern; and so net migration thereafter tended to be from north to south. A study of migration trends in Ghana from

about 1900 shows that net migration has been from the Northern Savanna Zone to the forest and coastal zones of the south for at least the last 60 years (cf. Table 9.2; 9.3; 10.12; and 10.13).

(2) The other way in which mobility may develop is when the standard of living rises while the level of living remains constant, and the index of dissatisfaction or restlessness increases as a result of improvements in communication, and knowledge of the outside world; through advertisements, newspapers, travel guides, radio, the experiences of returned travellers, etc. In this respect there is scarcely any part of the world that can be said to be uninfluenced. The knowledge of conditions of living elsewhere, whether accurate or not, is bound to make some dissatisfied with their lot at home.

The effect of external influences is to raise a people's level of aspiration far beyond what their local resources can satisfy, and create social difficulties if opportunities of emigration are limited. The developing countries must be aware of these outside influences which impinge on their populations and create additional difficulties. Some countries, e.g., the U.S.A. and Russia, during the initial stages of development took steps to minimize the confusing effects of outside influences. The Russians still have not raised the Iron Curtain; lately, Abruqah has called for a Jungle Curtain for Black Africa (Insight and Opinion, Vol.3, No.1968, pp.46-54; cf. Bing, 1968, pp.361-370).

When a statement is made that every person with a discrepancy between the scale of living and the standard of living is a potential migrant, it must not be inferred that he will necessarily emigrate

if the money he will obtain elsewhere is greater. What matters is the real income which for each individual and family consists both of money and of goods and services peculiar to the place in question, and includes non-tangible things which may not be found elsewhere, i.e., local scenery, climate, the quality of local water, intimate associations.

Possibly most of the emigrations from certain rural areas of Ghana are caused by poor, unreliable and inadequate water supplies, e.g., Ga-Dongbe-Shai, Ada, Ho, Anglo North, Tongu; most of the Northern and Upper Regions of Ghana. In the Ga-Dongbe-Shai district, as already noted in Chapter 1, the total annual rainfall is about 30 inches or less; the local water supplies, frequently derived from pools, are heavily infested with worms; consequently most people spend between a quarter and half of their working year nursing their infections. The result of this succession of infections is that the farmers cannot save; capital cannot be accumulated, people are poor, ill-fed; and the pressure to emigrate is very high or is rising. As the Gold Coast Medical Report (1953, p.22) states:

> "Guineaworm...causes great economic hardship to the infected individual who may be temporarily crippled. Where a community is heavily infested the entire local economy may be damaged. Only more widespread provision of pure water supplies and education of the public will eliminate Guineaworm".
> (cf. Survey of High-Level Manpower in Ghana, 1960, p.15; Guggisberg, 1925, p.143; Report of the Commission of Enquiry into Disturbances in the Gold Coast, 1948, p.25)

However, some may emigrate when intimate relations, family life, and local mores are unsatisfactory; or where these hamper their freedom of speech, thought and action (Engmann, 1965a).

Sometimes the act of migration gains a prestige of its own, irrespective of the utilitarian ends which started it, and acquires an independent, ongoing momentum; and so men and women migrate (or send their children abroad for education), merely because it is the fashionable thing to do.

There are others for whom the economic motive is not the primary consideration, although it is not entirely absent. Administrators, professional men and civil servants who are already employed, are transferred to other areas. In Ghana over 70 per cent. of the salaried workers and students in colleges were reported as having been born outside their places of residence; the higher the grade of the worker, the more true was this pattern and vice versa (cf. Table 10.12). Another group migrate for educational reasons: in Cape Coast, over 95 per cent. of the students in the secondary schools and colleges were born outside Cape Coast, and less than 25 per cent. of the students of University College of Cape Coast were born inside the Central Region of which Cape Coast is capital (cf. Could, 1967).

Subject to the qualifications made above, it is probably true to say that most of the migration in Ghana occurs in response to differentials in economic opportunities and amenities or variations in the scale of living which obtain in the various interconnected districts. (Taft, see Spengler and Duncan, eds., 1956, pp.555-556; Swinburne, 1924, chapter 5).

If the population of one region grows faster than that of another, while economic resources remain the same, a pressure gradient will be created and population will tend to move from the area of high

pressure to that of low pressure. Contrast Brong-Ahafo and the North, or the Mfanstiman district and Tema. Conversely, an increase in economic opportunities in one area (cf. 'Islands of Development') in which the natural rate of population growth remains constant, will result in a population gradient and labour will move thereto (e.g., Tema).

These migration movements are necessary because the birth rate is slow in responding to changes in the demand for labour (cf. Table 10.13 and 10.14.1).

It is assumed here that the supply of migrants will vary directly with the differential existing between the various inter-connected areas, in much the same way as the supply of a commodity or services varies with the demand. The absence of restrictive practices, imperfect information, etc., is assumed. But frictional effects due to distance change this simple linear relationship so that the volume of migration between two places, with the power of attraction remaining the same, will vary as the reciprocal of the square of the distance; that the power of attraction varies as the reciprocal of the square of the distance.[1] So that the pulling force which an area exerts on a place diminishes very quickly with distance; an increase in distance will result in more than proportionate decrease in the volume of migrants, and conversely, a decrease in distance will result in more than proportionate increase in the number of migrants.

It is not possible to illustrate this principle with good examples from Ghana, but Table 10.1 shows that in 1960 approximately 60 per cent. of the total enumeration were born locally, 20 per cent. were short-distance migrants, 12 per cent. were long-distance or inter-

[1] Volume of migration (V) = 1/square of distance (D_2^2).
and Power of attration (P) = 1/square of distance (D^2).

regional migrants, and 8 per cent., international immigrants. This shows the effects of increasing distance on the volume of migration. In Northern Ghana, 5,300 men were reported as having been born in Ashanti; 2,280 in the Eastern Region, and 1,640 in Accra. In Accra Capital District, 21,770 were from the Togo Republic, 7,500 from Ashanti, 8,440 from Northern Ghana, 7,660 from Upper Volta, 3,700 from Mali, and 1,320 from Liberia. Note again the effects of increasing distance on migration (cf. Table 9.4).

The largest number in Accra coming from Togo as compared with the number from Ashanti may partly be due to the fact that Togo is nearer to Accra than Ashanti, partly that both Togo and Accra belong to the same ecological zone, partly that the pressure impinging on the Togolese is probably greater than that on the Ashanti, and also on the type of labour demanded in Accra. This illustrates some of the problems in the practical application of the principle of frictional effects of distance on the volume of migration. Notice the limited assumption on which the theory is based: it assumes, for example identical skills on the part of the immigrants, a uniform terrain, evenly distributed population, uniform population pressure throughout the system in question, and a closed system. But it has been shown that in the question of population pressure no part of the world is completely isolated or insulated from external forces.

Notice that in Accra more males were reported as originating from the North than from Ashanti (cf. Census, 1948, p.16). Here again the quality and type of labour demanded, the level of living of the potential migrant, the intensity of the pressure impinging on him and

his skill in relation to the type of labour demanded, must be important factors. Usually more low grade labour is demanded than high, but the principle of frictional effects on the volume of migration does not take into account differences in the quality and type of labour demanded.

Spatially, migrations may produce at least two important effects. Firstly, the reception areas increase their population numbers and densities (e.g., Brong-Ahafo South, Buem-Krachi, Tema); secondly, the source areas lose their populations; densities decline and towns stagnate or even decline in size (Map 6.1). Frequently, in the receiving areas, because migration tends to be male selective, males predominate while in the source areas females predominate. Tema, Brong-Ahafo South and Kwahu North are examples of the former, whilst Tongu, Ada and Frafra are examples of the latter. This is especially true of long-distance migration as the 1948 census report put it, "... the further the migration, the smaller the proportion of women who follow" (p.16). Yet at other times, it is the women who predominate in short-distance migration, in Frafra, Mfantsiman and Ga-Dangbe-Shai.

The female predominance of short-distance migration has been ascribed to marriage; but it is also possible that the prevailing systems of inheritance and land tenure enforce upon the females the need to emigrate and seek their fortunes elsewhere while at the same time they make it incumbent upon the males to remain at home and manage the family property, or take care of a widowed mother, etc. Figs 10.2.1 to 10.2.6 show the population structures of districts which have suffered heavy net emigration; Figs. 10.2.7 to 10.2.11 represent the population structures of districts which have enjoyed heavy net

immigration. Further results of migration will be discussed in Chapter 10.

Movements of people naturally entail movement of capital, and there are both direct and indirect financial repercussions as well. Immigrants may increase the value of the territory into which they go; they bring cash or their labour with them and land prices go up. Nonetheless, types of migration resulting from absolute poverty can have most disastrous consequences for the economy of the receiving areas especially where the economies are not expanding or where they may be contracting; or where the immigrants are unskilled, poor and diseased. The bulk of the immigrants into Ghana from the Upper Volta, Togoland, Ivory Coast, Niger and Nigeria appear to be of the latter type. For further discussions of this type of migrant reference may be made to Chapter 10.

I t seems to the present writer that the critical test as to whether immigration is beneficial or not to the receiving area is not whether the immigrants in question are skilled or unskilled, educated or not. It is whether their presence adds to both the gross and net national products or not; or whether they get productive employment in the host area. If they get jobs readily while there is substantial unemployment among the host population, then something must be fundamentally wrong with the latter and stopping immigration will not relieve unemployment: it may even aggravate it.

Migration trends within Ghana up to 1931

Migration, whether the internal type or the international type, is not a new phenomenon in Ghana, but the absence of reliable data makes

its quantification and analysis difficult. In the sections that follow in this chapter, the past censuses and other official reports will be examined for evidence of early migration trends.

The previous censuses, including that of 1921, paid attention only to the presence of non-African immigrants in Ghana, e.g., Indians and Europeans. The first serious attempt to amplify the scope was at the 1931 Census which gave a "detailed" description of the sources of immigrants into Ghana (Cardinall, 1932, Vol.1, pp.100-152; Hill, 1956). But the people were naturally suspicious and often illiterate, and some had entered illegally. Probably some even did not know where they had come from, as frequently places had "Europeanized" names of which the illiterate were not aware. For example, in Ghana, Accra in the Native tongue is Ga, Cape Coast is Ogua, Winneba is Simpa, Saltpond is Akyemfo, Elmina is Edina, or Dina, etc. Besides, Ghana shares common boundaries with other countries which divide some ethnic groups; for them the frontiers do not exist. This means free, if unlawful, movement. The writer knows cases in the Ho District where Ghanaians have farms in Togo, and vice versa. One walks along a footpath and is alternatively within and outwith Ghana; frequently, the rustic immigrant from the Ivory Coast does not know that the area from which he comes is so called. Cardinall (1932, Vol.1, p.9) noted a heavy net immigration from the French areas to the North of Ghana and explained it mainly in terms of climatic dessication. This theory has since been found untenable (cf. Dresch, 1945).

The 1931 Census divided the immigrants into three major groups, viz.:

1. Immigrants from the British Colonies, e.g., Gambia, Sierra Leone, Nigeria, Cameroons, West Indies, etc. 70,000 Persons were reported from this grouping.

2. Other West African aliens, i.e., French West Africa, Liberia, etc. 222,000 Persons were reported from these sources; of these Upper Volta accounted for approximately 90 per cent. (cf. Chapter 10).

3. Non-Africans; of these just over 3,000 persons were reported.

Of the total immigrants Kuczynski (1948) estimated that at least 65 per cent. were males and 35 per cent. females (cf. Fig. 10.1.1).

There is little of value by way of age-sex structure of the immigrants but it would seem that in spite of the closer historical ties with the British colonies of West Africa, they accounted for only 25 per cent. of the total immigrants. The returns, of course, may have been faulty. It would seem however that the frictional effects of distance and difficult terrain on the potential immigrant discussed earlier may be a partial answer. For one thing the French colonies are nearer; land contact with them is easier. The effect of distance and size of source area may be exemplified in Sierra Leone which sent more than Gambia but less than Nigeria. Ivory Coast sent a much smaller number than Togoland; here type of terrain and ease of communication between Ghana and Togo appear to be a partial answer; by contrast, the terrain between the southern part of Ghana and Ivory Coast is most difficult. Table 9.1 gives the distribution of immigrants.

Contrast the large number of immigrants from the French, with the small number from British colonies recorded in Togoland and the North. On the whole the south of Ghana was most favoured. The Gold Coast

Table 9.1

International Migration into Ghana, 1931[1]

Region of Residence	Country of Origin		
	British Colonies	French Colonies	Total
The Colony	44,855	80,190	125,045
Ashanti	15,335	53,464	68,799
Northern Territories	6,378	54,916	61,294
Togoland (mandated)	3,968	30,111	34,079
Total, Ghana	70,536	218,681	289,217

Source: Based on data derived from Census, 1931, Vol. 1

[1] Excludes non-Africans (about 3,000 in all).

Table 9.2

Population Enumerated in Another Administrative Region in Ghana, 1931, (The Cumulative Effects of Inter-regional Migration)(1)

	Region of Residence				Total Emi-grants
	Colony	Ashanti	Northern Territories	Togoland	
Colony	-	20,293	1,131	4,910	26,334
Ashanti	15,442	-	1,746	316	17,504
Northern Territories	19,742	22,659	-	1,612	44,013
Togoland	11,188	1,221	-	-	12,409
Total received	46,372	44,173	2,877	6,838	100,260

Source: Based on data derived from The Gold Coast, 1931, Vol.2 pp. 4-7; 14-17; 21-22. Also Report on the Mines Department, 1937-38, p. 16.

Handbook of 1928 attributes the expansion of the cocoa and mining industries in particular to the presence of these immigrants. This is an example of the case where immigration assists in the development of local resources. Table 9.2 describes the inter-regional movements of the population within Ghana.

It appears from the table that the Colony received a total of 46,372 and sent out into other regions a total of 26,334 and gained a net total of 20,038 (i.e., 46,372-26,334); similarly, Ashanti made a net gain of 26,669; the North lost over 41,000 and Togoland lost over 5,500. The table would suggest that during the period 1921 to 1931 both the North and Togoland were losing population to Ashanti and the Colony.

Migration Trends, 1931-1948

It appears from the available data that during the period in question (1931-1948) there was a considerable reduction in net immigration from foreign African lands into Ghana; but immigration from non-African sources doubled from 3,000 to over 6,000. The overall decline in net immigration was ascribed to a number of factors; e.g., the economic slump in the thirties, the Second World War (1939-1945), and restrictions on emigration by the French authorities of French West Africa. Although the total enumeration in 1948 showed a marked increase over the previous one, the number of foreigners recorded actually declined from about 220,000 in 1931 to about 174,000. Both returns may have been wrong. But the Census Report (p.15) of 1948 said:

> "The...immigration figures are much smaller than those suggested in the 1931 report but comparison is

> fruitless because in 1931 immigration appears to have been derived from figures relating to tribal origin. As non-indigenous tribes had existed in the Gold Coast for generations, they were not all immigrants and the immigrants were probably, therefore, greatly exaggerated."[1]

About 74,000 of the foreigners were recorded in the Colony, 26,000 in Ashanti, 38,000 in the North, and 35,000 in Togoland. There appeared to be group preferences. Those from the British Colonies (of West Africa) preferred Colony, and almost 70 per cent. thereof came from Nigeria. The non-Africans were mainly in the towns, e.g., Accra, Sekondi-Takoradi, Kumasi, Obuasi, Prestea, Cape Coast, Tamale, Tarkwa and Bogosu. Their number diminished very quickly from South (Accra) to North (e.g., Tamale), partly reflecting the fact that they arrived mostly by sea, or by coastal roads in the South.

Residence of Foreign-born Population

Relatively more of the foreign population were reported in the towns, so that while only 17 per cent. of the total Ghana enumeration lived in towns, no less than 33 per cent. of the foreign-born were recorded there; furthermore, the foreign-born comprised about 4.2 per cent. of the total enumeration, but they accounted for over 8 per cent. of the urban population. This conceals some important differences. In the Colony not less than 57 per cent. of the foreign-born were reported in the towns, and in Ashanti the proportion was 32 per cent. Again, in Accra Administrative District, approximately 90 per cent. of the foreign-born were recorded in Accra Town alone, in the Kumasi District 43 per cent. went to Kumasi town, and in Sekondi-Takoradi District 74 per cent. went to Sekondi-Takoradi alone. For reasons for their preference for urban residence, see Chapter 10.

[1] Also General Plan for the Development of the Gold Coast, Accra, 1944. paras. 49-50 (Governor's Despatch No.222 of the 26th July 1944, to the Secretary of State for the Colonies).

Table 9.3

Population born in Another Administrative Region 1948

(The Cumulative Effects of Population Movement within Ghana)

Region	Resident (enumerated) Where born	Not born where enumerated but (resident) elsewhere in:-				
		Colony	Ashanti	North	Togoland	Total immigration
Colony	1,954,872	-	33,569	83,217	59,204	175,990
Ashanti	675,841	39,626	-	69,743	6,244	115,613
Northern Territories	997,392	3,477	3,821	-	10,607	17,905
Togoland (mandated)	317,778	7,254	1,718	20,485	-	29,457
Total emigration	-	50,357	39,108	173,445	76,055	338,965

Source: Based on data derived from Census, 1948, Table 20, p.360

Table 9.4

Composition of Migrants by Administrative District in the Colony and Ashanti, 1948

Administrative District	Population not enumerated where born but elsewhere in:-			
	The Colony	Ashanti	Northern Territories	Togoland
Accra	62	5	17	16
Ahanti-Nzima	79	5	13	3
Akwapim-N. Juaben	67	9	10	14
Birim	73	4	14	9
Cape Coast	76	6	12	6
Ho	22	3	17	58
Keta-Ada	85	3	7	5
Sefwi	35	29	34	2
Volta River	85	2	7	6
Wassaw-Aowin	61	9	27	3
Bekwai	23	48	25	4
Kumasi	19	49	29	3
Mampong	11	40	46	3
Wenchi-Sunyani	10	40	48	2
The Colony	69	8	15	8
Ashanti	18	48	32	2

Source: Based on data derived from Census, 1948, Table 20, p.360.

The Cumulative effects of Regional Population Migration within Ghana

It would seem from Table 9.3 below that approximately 340,000 people were involved in inter-regional migration within Ghana.

Notice that Ashanti sent out about 39,600 to the Colony and received in return about 33,600 people, and so made a gain of over 6,000; similarly, the North sent almost 70,000 people to Ashanti but received in return only 3,8000, and made a net loss of over 65,000. The North lost on balance very heavily to the Colony, Ashanti and Togoland; Togoland lost to Ashanti and the Colony. On the whole both Ashanti and the Colony gained respectively 125,633 and 76,505; by contrast the North and Togoland lost a total 155,540 and 46,598. The North sent more per head of the population to Ashanti (10 per cent.) than to the Colony (4 per cent.). This appears to be the effect of distance and type of labour. A further analysis of the data shows also that the migration from Togoland diminished very quickly from East to West, again reflecting the effects of the frictional drag of distance.

Table 9.4 shows variations in internal movements according to administrative districts. In the Colony as a whole 69 per cent. of the migrants had come from elsewhere within the Colony, 8 per cent. from Ashanti, 15 per cent. from the North, and 8 per cent. from Togoland.

Notice the low proportion of migrants from the Colony to Sefwi (althought itself in the Colony) and high proportion from the North and Ashanti; this would suggest a heavy net movement into that district. Contrast the figures for Keta-Ada with those of the former

district. Notice the low proportion of migrants from Togoland into the Western Region of the Colony, i.e., Sefwi and Wassaw-Aowin; again the frictional effects of distance and of changing physical and cultural environments.

An examination of the indigenous migrants within Ghana shows that, like their counterparts from foreign lands, they were recorded more frequently in the towns. Table 9.5 shows the proportion of immigrants enumerated in towns. Notice that 88 per cent. of the immigrants from the Colony into Ashanti were enumerated in towns, and 46 per cent. of the immigrants from Ashanti into the Colony were enumerated in such places. This resulted partly from the quality of skills possessed by them, and their occupational structure, most of them being teachers, administrators, traders, etc.

Table 9.5

Per cent. of immigrants enumerated in urban places by origin and destination

Origin		Destination
Colony	-	88
Ashanti	46	-
Togoland	30	48
Northern Territories	38	24
Other British Colony	60	72
Other Foreign Colony	24	55

Source: Based on data derived from Census, 1948 Table 22, pp.362-367.

Duration of Stay of Immigrants

Information on the duration of residence of immigrants in the towns is very inadequate, but an analysis of the 1948 census returns

suggests that about 62 per cent. of the immigrants had resided in the host-towns for five years or more, 24 per cent. for one to 4 years and only 14 per cent. for less than one year. These values vary from district to district. Note the cumulative effects of time which operate in such a way that the majority of the immigrants have resided in the host area for longer periods.

Table 9.6 shows that with the passage of time the immigrant population tends to lose its abnormal demographic characteristics and become more and more like the host-community, with respect for example to the male ratio per 1,000 females and age structure. The returns of the 1948 census show that the male ratio per 1,000 females of the overall urban population is 1,098; that of the entire enumeration is 1,022 and that of the rural population is 1,007. The value for the urban population varies with length of residence so that among those who have resided in the towns for less than one year, the male ratio is 1,389, and among those with five or more years of residence the male ratio is 1,000. In terms of urban population, and the overall enumeration, the urban ratio of 1,000 is relatively very low. The increasing normalization of the male ratio with the length of residence suggests that the urban immigrant population tends to stabilize with the passage of time. The mechanism by which this effect takes place is not clear; but it may partly arise from the fact that as the immigrants get established in their jobs and new homes, they marry, preferably women from their home districts, and partly from the presence of children born subsequent to the arrival of parents.

Immigration turn-over is the rate at which immigrants return and

Table 9.6

Male ratio of immigrants per 1,000 females according to duration of residence in towns, (African Population), 1948

Administrative District	Duration of stay		
	Less than 1 year	1-4 years	5 years or more
Ghana	1,389	1,228	1,000
The Colony	1,329	1,238	989
Accra Admin. Dist.	2,030	1,260	1,002
Ahanta Nzima	1,446	1,210	1,138
Akwapim-New Juabeng	1,041	1,082	914
Birim Admin. Dist.	1,224	1,197	995
Cape Coast	1,225	1,164	859
Ho	1,142	1,143	973
Keta-Ada	975	1,120	943
Sefwi (Bibiani)	1,503	1,773	1,801
Volta River	1,074	1,132	974
Wassaw-Awowin	1,504	1,675	1,638
Ashanti	1,373	1,177	1,075
Bekwai	1,256	1,423	1,237
Mampong	1,325	1,106	851

Source: Based on data derived from Census, 1948, Table 22, pp.362-367.

are replaced by new ones; the higher the rate of turn-over the higher will be the proportion of those who have resided for shorter periods (i.e., one year or less), and the smaller will be the proportion of those who have resided for longer periods (i.e., 5 years or more); that is to say, the lower will be the cumulative effects of time on the number of immigrants. The process is analogous to the reaction of the age structure of a given population in circumstances of high death rates. It has been demonstrated elsewhere in this thesis that where infant mortality rates are high, the proportion of children in the entire population is high, and that of adults low; and vice versa. The immigration turn-over is another indicator of the rate of stabilization

among the immigrant population concerned.

In lieu of actual data on the turn-over or replacement rates of the immigrant population, the proportion of the immigrant population in question which has resided in a given locality for one year or less may be taken as its rate of turn-over. Thus the rate for the overall immigrant urban population in 1948 was 14 per cent. (cf. Table 9.7).

In some districts, e.g., Sefwi, Wassaw-Aowin, and Bekwai, where net immigration is high, the male ratio per 1,000 females among the immigrants remains high, or even increases with length of residence in the towns. An examination of Table 9.4 shows that no less than 52 per cent. of the urban immigrants in the Bekwai district originate from other regions, 25 per cent. having come from the Northern Territories alone; 34 and 29 per cent. of the immigrants in the towns of Sefwi originate respectively from the Northern Territories and Ashanti. These immigrants are frequently of different ethnic and language groups, come from different ecological zones, and show less inclination to settle. The high turn-over rate among these immigrants is a factor in the extremely high male ratio.

By contrast, in districts where net emigration is the rule, e.g., Ho, Keta-Ada, Volta River, Cape Coast, the male ratio of the urban immigrants declines rapidly with length of residence, and females predominate significantly. An examination of Table 9.4 shows that no less than 85 and 76 per cent. of the immigrants recorded in the Volta River and Cape Coast Districts respectively originate in the neighbouring areas and are frequently persons of the same ethnic, language and cultural groups, with similar occupational characteristics;

and in the Ho district no less than 58 per cent. of the urban immigrants originate in the Togo Republic; again these belong to the same language, ethnic, and cultural group as the host district; the ecological conditions are similar to those of the home country, and most of them tend to be self-employed in business, the trades, and commerce. To them both the social and physical environments have changed little, and conditions for stabilization are highly favourable.

Table 9.7

Per cent. of Urban Population according to duration of Residence; and Male Ratio per 1,000 Females

District	Duration of residence in per cent.			Male ratio of immigrants after a residence of 5 years or more
	Less than one year	1 to 4 years	5 years or more	
Cape Coast	10.68	21.22	68.10	859
Keta-Ada	8.16	18.29	73.53	943
Volta River	10.90	10.52	68.58	974
Ho	13.60	25.86	60.54	973
Sefwi (Bibiani)	20.32	42.08	36.60	1,801
Wassaw-Aowin	20.15	35.27	44.58	1,638
Bekwai	20.68	30.84	48.48	1,237
Ghana, overall	14.00	24.00	62.00	1,098

Source: Based on data derived from Census, 1948, Table 22, pp.362-67.

Examine Table 9.7 which gives the proportion of the urban immigrant population according to the duration of residence. The urban immigrants who have resided in the localities in question for less than year may be called short-term residents; those who have resided for more than one year but less than five years may be known as medium-term residents; and those who have resided for five years or

more, as long-term residents. The proportion of the short-term residents in a given population may be taken as its replacement or turn-over rate; and the proportion with five years' residence or more, as its rate of stabilization; this also reflects the cumulative time effects on the growth of population in question.

Short-term Residence: Low Rate of Stabilization

Table 9.7 shows that the proportion of short-term migrant residents in the urban places varies from about 8 to 20.68 per cent., the overall value being 14 per cent. In certain districts, e.g., Cape Coast, Volta River, Ada-Keta, the proportion of short-term residents in question are respectively 10.68, 8.16 and 10.90, and much less than the overall Ghana figure; in other districts, e.g., Sefwi, Wassaw-Aowin, the proportions are about 20 per cent. and far above the overall Ghana average.

Compare these values with the male ratios, and note that where the proportion of short-term residents is low, the male ratios are very low; e.g., Volta River and Ada-Keta; and where the proportion is high, the male ratio is high; e.g., Sefwi and Wassaw-Aowin. Compare these values with the overall Ghana male ratio of 1,098 of the population in question.

The former districts with low replacement rates or short-term residence rates are areas of net population emigration, stagnant or even declining populations and contracting economies; the latter districts are areas of heavy net immigration, growing populations, expanding economies and high rate of resource development.

Long-term Residence

Given the same rate of natural increase, the population of a given locality will grow as long as the number that enter exceeds the number that emigrate. This is represented by the stabilization effects on the growth of the population concerned. An examination of the table shows that in districts like Cape Coast, Volta River and Keta-Ada, the proportion of long-term residents is very high, and accounts approximately for from two-thirds to three-quarters of the total immigrant population; these high proportions of long-term residents are also associated with very low male ratios per 1,000 females.

By contrast, districts like Sefwi, Wassaw-Aowin and Bekwai have very low proportions of long-term residents; in Sefwi, the proportion is less than 40 per cent. This reflects a low rate of stabilization of the populations concerned. Note that the overall rate for Ghana is 62 per cent. These low rates of long-term residents are associated with very high male ratios per 1,000 females among the immigrant populations concerned; heavy net immigration, high rates of short-term residents or replacement rates among immigrants; and low rates of stabilization, expanding economies, etc.

It will be concluded from this analysis that high turn-over, or short-term residence rates among urban immigrant populations, low rates of stabilization, and high male ratios per 1,000 females are characteristic of areas with heavy net immigration, high rates of population growth, economic expansion and resource development. The majority of the new arrivals are single males, reflecting the type of labour demanded during the initial phase of rapid economic

development. By contrast, low short-term residence or turn-over rates among immigrants, high rates of stabilization and very low male ratios characterize areas of heavy net emigration, stagnant or even declining population, stagnant or even contracting economies and low rates of resource development.

It seems that high rates of short-term residence, or turn-over of immigrants, are indicative of areas of rapid population growth through net immigration; and low rates of turn-over or short-term residence, of stagnant or even declining populations. The former condition arises when the net or marginal addition per unit time to a given population grows faster than the given base population; and the latter condition will result when the rate of decline of the net addition is equal to, or greater than that of the given population.

Summary and Conclusions

In the foregoing chapter the causes and effects of population migration in Ghana were identified and analysed, and evidence thereof adduced from the period 1921 to 1948. The important difference between the aspirations and achievements of people as a factor in population pressure was stressed, and although the gap between the two forces was shown to be the motive force in population migrations, nonetheless, the measure in which a given individual can accommodate or endure 'privation' or the state of unsatisfied needs - or his resilience - was shown to play a decisive role therein.

In Ghana, given the level of tolerance of the individual, it is the geographical differences in the levels of living, the uneven distribution of economic resources, and the varying quality of

'amentities' that determine the volume and direction of migration. In the receiving areas, the results of migration include rapid population growth through immigration, high male ratio per 1,000 females, female deficit especially among persons aged 25 years or more, high population mobility and absence of stabilization. Properly managed net immigration should lead to an increase in the tempo of economic and resource development (e.g. cocoa and gold mining in Ghana). In the source areas, by contrast, the results of migrations include the stagnation or even the decline of population numbers, depopulation of areas which once held dense populations, abandonment of farms in rural districts (e.g. Accra Plains), high rate of population stabilization, low male ratios, and high female predominance.

Paradoxically, in most rural districts of Ghana, the loss of population aggravates, rather than alleviates population pressure (e.g., Ga Rural Districts) - that is, the desire on the part of the individual to get away.

Attention was drawn to the fact that population numbers alone do not create population pressure; the role of external forces and expanding knowledge of the outside world in accentuating or even creating local population pressure was demonstrated; the channelling of these influences to advantage was urged;or if that was not possible, the reduction of their ill-effects to a minimum.

Geographically, the receiving areas are limited in area or confined in space, so that the effects of immigration are also confined to limited areas, e.g., Tema. By contrast, the source areas are really extensive, and so the effects of emigration are less

accentuated and striking than those of immigration. Note that less than 10 per cent. of the area of Ghana was identified as immigration convergence centres, or growing points, whilst the rest were source areas.

Although a certain measure of population mobility is essential to economic and social development, an excess thereof could lead to waste of capital used in moving and training the labour; and rapid loss of acquired skills and valuable on-the-job experience; it also creates psychological and social problems which adversely affect labour efficiency (cf. Spengler and Duncan, 1956, p.508).

For the reasons just set out above, the present author urges that effective measures be taken to help the new arrivals procure productive jobs and settle quickly. Living conditions could be improved by the provision of suitable accommodation, canteens, cafeterias, schools, recreational and cultural facilities, e.g., theatres, art galleries, etc.

Most rural-urban movements among teenagers and children are for educational purposes, but when the children concerned have completed their schooling in the urban areas, they frequently decide to remain in the towns either because of the absence of amenities in the rural areas, or lack of suitable jobs; or that the type of education received did not equip them with skills for productive work (Guggisberg, 1925, pp.81-82). The answer is not to limit opportunities for education - the demand for it will increase.

CHAPTER 10

MIGRATION TRENDS AND THEIR GEOGRAPHICAL SIGNIFICANCE, 1960

In this chapter, the 1960 Population Census of Ghana and other sources will be examined for migration patterns; the composition, age, sex and occupational structure of migrants; the relationship between population migration, labour movements and other demographic characteristics; also the significance of migration for the distribution of population.

The 1960 Census classified the total enumeration into four categories, viz.:-

1. Population born in the locality of enumeration (called hereafter 'locally-born');
2. Population born in another locality but enumerated in the same Administrative Region;
3. Population born in another Administrative Region;
4. Those born abroad.

Table 10.1

The Distribution of the Population of each Administrative Region, and of Ghana, according to their places of birth, 1960

Administrative Region	Place of Birth in Per Cent.			
	Locality	Another Locality	Another Region	Abroad
Western (and Central)	59.4	24.2	10.1	6.3
Accra	48.4	5.9	30.3	15.4
Eastern	49.6	27.3	14.4	8.7
Volta	65.2	19.8	5.4	9.6
Ashanti	53.2	19.5	18.5	8.8
Brong-Ahafo	59.2	12.7	18.6	9.5
Northern (and Upper)	68.6	23.2	2.5	5.7
Ghana - Total	58.4	20.9	12.4	8.3

Source: Based on data derived from Census, 1960, Vol.2.

A brief description of the four groups stated above may be given. Group (1) comprises all those residents who were born in the locality where they were enumerated at the time of the census; the locality having been defined for the 1960 census. For such persons the enumerator was expected to specify the locality and region in which the respondent was born. Group (4) appears quite self-explanatory; but difficulties arise from the fact that Ghana shares common boundaries with foreign countries (Ivory Coast, Upper Volta, Togo) which divide members of the same ethnic groups. Thus a person who crosses over from the Upper Volta to Northern Ghana need only take a couple of steps to find himself in another country, politically. Such a person goes to the market or farm, or attends funerals or other public celebrations on the 'foreign side' of the boundary; geographically and socially his environments have changed little; whereas within Ghana a journey from Bawku to Accra takes the individual over a distance of 500 miles, nearly a month by foot, with all the attendant risks of being looted or robbed en route, or more than two days away by motor road. For a fuller account of the environmental differences see Chapter 1.

The difference between Groups (2) and (3) is very imprecise, and for most people in practice, of little significance. Here again there are appreciable effects of similar and contrasting environments to consider (Engmann, 1965a); for whereas a person may travel several hundred miles or more and still remain in the same administrative region, another need only take but a few steps to find himself in a difference administrative region.

Frequent changes of local, district and regional boundaries may

have confused respondents and led to inaccurate statements; and the occurrence of the same locality name in more than one region is also confusing. For example, there are no less than 15 localities called Kofikrom, 10 called Beposo, and over 350 called Nyamebekyere scattered all over the country (Census, 1960, Vol.1). For suggestions to overcome this difficulty - "the ubiquity of place names," reference may be made to Chapter 2.

A careful distinction must be made between population born abroad, and the foreign origin population; the latter group is the larger because it comprises much of the former group. About 8.3 per cent. of the total enumeration was reported to have been in the former group, and 12.3 per cent. in the latter group. The former group included foreigners born abroad, foreigners who took up Ghanaian citizenship subsequent to being admitted to the country, and persons of Ghanaian parentage born abroad but who subsequently entered the country as Ghanaian nationals; these last two groups numbered about 24,000 (or under 0.4 per cent. of the overall enumeration in 1960). The foreign origin population (to be known hereafter as "foreign population") comprised foreign nationals born abroad; and persons born in Ghana of parents of foreign nationality. At this point the legal definition becomes very complicated and depends on the interpretation placed on it by the existing laws of the country. For further details see the Ghana Nationality Act, 1961 (Act 62) and subsequent amendments, and the Ghana Nationality Regulations, 1965, Arrangement of Regulations, No. L.I.471. The implications of this difficulty for comparative analysis of future census returns and international comparisons are clear.

Table 10.2

Place of Birth, Proportion in Urban Areas, and Male Ratios per Thousand Females of Foreign Origin Population in Ghana, 1960.

Country of Origin.	Per cent born in Ghana.	Per cent of total foreign Population	Per cent in urban areas	Male ratio per 1,000 females.
Ivory Coast	40.0	6.6	12.0	1,340
Nigeria	40.0	23.0	54.0	1,275
Togo Republic	37.0	33.8	24.0	1,165
Upper Volta	32.0	23.5	24.0	2,006
Lebanon	32.0	00.2	93.0	2,101
Dahomey	31.0	3.8	24.0	1,330
Other African	31.0	0.8	41.0	2,047
Liberia	25.0	1.0	82.0	1,680
Mali	25.0	2.3	59.0	3,552
Niger Republic	19.0	3.0	48.0	4,472
United Kingdom	7.0	0.9	77.0	1,525
Other European	7.0	0.4	83.0	1,911
Other Asian	7.0	0.2	70.0	1,248
All Countries	35.0	100.00	34.0	1,468

Source: Based on data derived from Census, 1960, Vol. 3 . Table 12, p. 103; ibid., Advance Report of Vols. 3 . and , Tables 11 and 12, p. 12.

Distribution of Population of Foreign Origin

Approximately 827,000 persons of the above group were enumerated at the 1960 census and comprised just over 12.3 per cent. of the total enumeration. It may be stated as a rough approximation that with the exception of persons born abroad of Ghanaian parentage, the foreign origin population included also most of the rest of the population born abroad. In other words, most of the foreign origin population were born abroad, and not in Ghana. Table 10.2 shows that the percentage of foreign population born in Ghana ranged from 40 per cent. to less than 10 per cent. among some Europeans and Asians. The proportions of 'foreigners' born in Ghana are above average among the Nigerians, the Togolese and the Ivorians. This is indicative of immigrant populations who are tending to settle. It is also very high among the Lebanese, but low among the European population.

More than 90 per cent. of the foreign origin population derive from West Africa; over 80 per cent. originate from Togo, Upper Volta and Nigeria (Table 10.2).

Residential and Occupational Characteristics of Foreign Origin Population

As in 1931 and 1948, so in 1960 proportionately more of the foreign population were enumerated in the towns than was the case with the overall population of Ghana; so that while only 23 per cent. of the latter were returned as urban, approximately 34 per cent. of the former were so returned, that is about 50 per cent. above the national average. By contrast, only 15 per cent. of the 'locally born' population were returned as urban. Furthermore, while the foreign population comprised just over 12 per cent. of the total

Table 10.3.

Distribution of Persons aged 15 years and over according to Place of Birth and Industries.

Industry	Place of Birth				
	Same Locality per cent.	Other Locality same region per cent	Other region per cent	Abroad in:-	
				West Africa per cent	Outside West Africa per cent
All Industries	100.0	100.0	100.0	100.0	100.0
Agriculture	72.0	63.0	44.2	45.3	3.1
Mining, etc.	0.3	0.1	4.0	6.0	8.7
Manufacturing	8.1	10.9	11.2	7.9	5.3
Construction	2.0	3.0	6.7	5.7	11.8
Electricity, etc.	0.2	0.5	1.5	0.9	0.8
Commerce	12.5	13.5	15.4	22.4	28.0
Transport	1.9	3.0	4.2	2.9	10.0
Services	3.0	6.0	12.8	8.9	32.3

Source: Based on data derived from Census, 1960, Advance Report of Vols. 3 and 4, Table 38, p. 59; ibid., Special Report, 'E', Table 25, pp. 110-113; ibid., Vol 4, Tables 4 - 5, pp. 24 - 65.

enumeration, they accounted for more than 18 per cent. of the urban population; again, about 50 per cent. above the national average. Thus they appear to be more urbanized than the native population. Table 10.2 shows the proportion of the foreign population enumerated in the towns. It is evident from the table that the proportion of foreign population resident in urban areas varied from a high of 95 per cent. among the Lebanese to 12 per cent. among the Togolese nationals. An analysis of the returns suggests that more than 90 per cent. of the Lebanese workers were engaged in commerce, service and related activities, and over 90 per cent. of their total accounted for by Kumasi, Accra and Sekondi-Takoradi. Probably there is no other foreign national group whose population were so concentrated in so few urban areas. The British were about the only non-Africans who engaged in mining, forestry and agriculture. It would seem that the skills and occupations of foreigners in Ghana are an important factor in their places of residence. But the land laws which forbid the full ownership of land by foreign nationals may also be an important factor.

Table 10.3 shows the distribution of the population in the major industries according to their places of birth.

It will be inferred from Table 10.3 that only 3 per cent. of the immigrants born outside West Africa are engaged in agriculture, but approximately 30 per cent. and 32 per cent. are engaged respectively in commerce and services. It seems therefore that the foreign immigrant population tends to engage in non-agricultural activities more than average for the country, and is more than average urbanized.

MAP 10.1.1

SOURCE: based on Census, 1960

Compare Maps 10.1.1 and 10.5.2 (Distribution). A further analysis by means of the Spearman's coefficient of rank-correlation between the distribution of foreign-born population and the per cent. of urban population shows that the two are positively and significantly associated (rho = +0.506). Also the association between the distribution of foreign population and participation of labour in commerce and mining are respectively 0.325 and 0.323. The high rate of participation of foreign population in urban-based and related economic activities explains their preference for residence in urban areas (Appendix III and Table 10.5).

Age and Sex Structure of the Foreign Origin Population, 1960

An analysis of the available data shows that for the overall population returned in 1960 there are about 1,022 males to every 1,000 females. For a total population of approximately 7 millions this sex imbalance is statistically significant. Among the foreign origin population there are 1,468 males to every 1,000 females. This difference is more acute statistically than that noted in the total population. The total absolute male predominance (ie., Total males minus Total females) is 73,725; but the male predominance among only the foreign origin population is 156,941 and therefore more than twice the former. Thus it is clear that the entire male preponderance recorded at the 1960 census arose entirely from the presence of foreigners. Otherwise females predominated among the native population of Ghana (Table 10.4.1).

Table 10.2 also shows the distribution of male ratios among some of the foreign populations according to their countries of origin;

Table 10.4.1

Age-Specific Male Ratios of Total Ghana Population, Foreign Origin Population and Native Population, 1960

Age in years.	Males per 1,000 Females		
	Total Ghana	Foreigh origin population	Native population
0-4	982	1,017	980
5-9	1,025	1,032	1,022
10-14	1,106	1,167	1,091
15-19	1,037	1,222	1,014
20-24	832	1,139	814
25-29	909	1,481	847
30-34	986	1,799	891
35-39	1,106	2,215	871
40-44	1,140	2,255	998
45-49	1,284	3,028	1,120
50-54	1,184	2,878	1,045
55-59	1,225	3,364	1,087
60-64	1,162	2,983	1,044
65 and over	1,126	3,106	997

Source: Based on data derived from Census, 1960, Vol. 3 and Special Report 'E'.
cf. Clarke, J.I. (1968), in Caldwell, J.C., and Okonjo, C. (eds). The Population of Tropical Africa, p. 276, Table 5.

Table 10.4.2

Males per 1,000 Females of Foreign Origin Population according to Administrative Regions, 1960, Ghana.

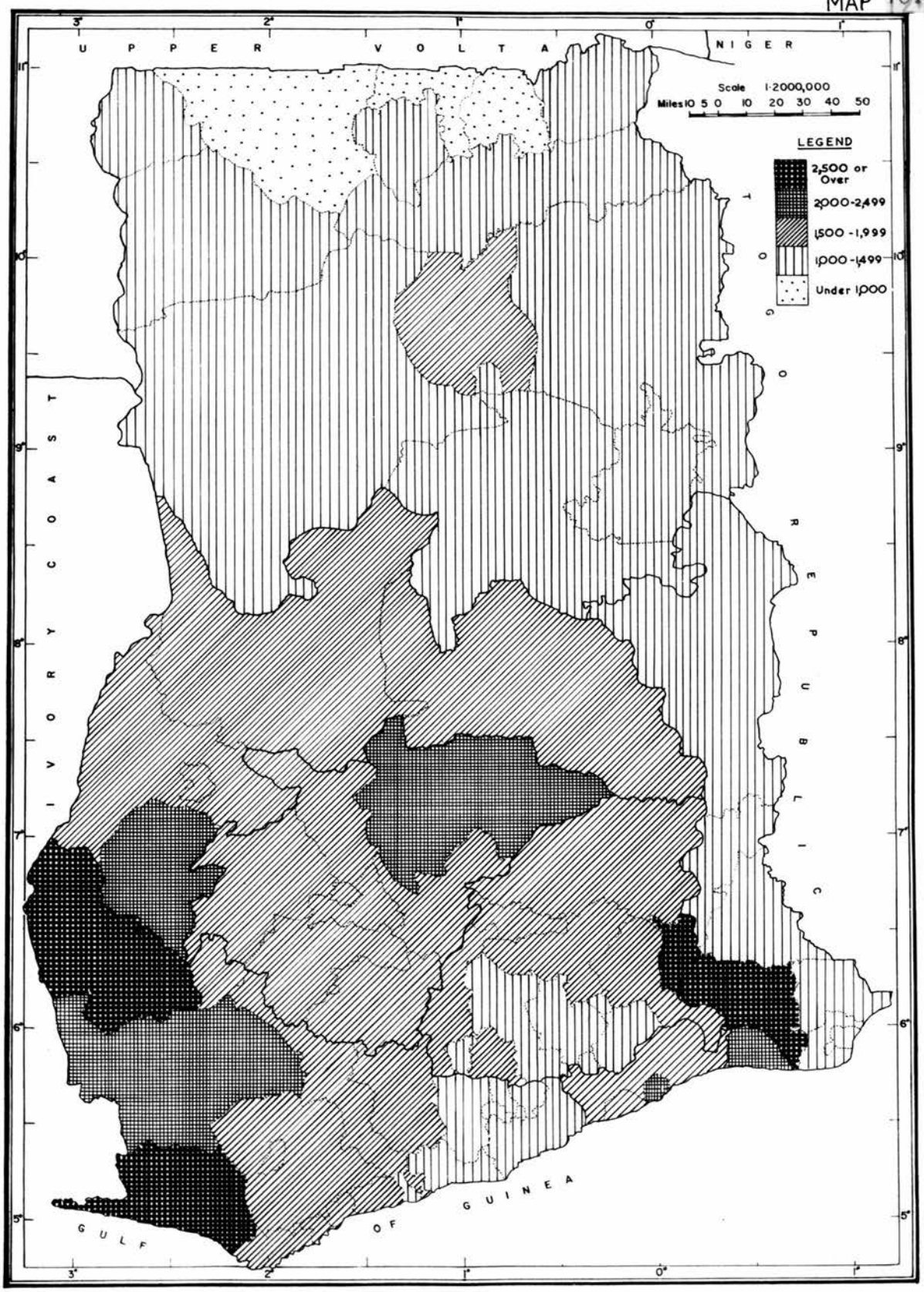
Administrative Region	Males per 1,000 Females
Western (and Central) Region	1,639
Accra D.C.	1,612
Eastern	1,463
Volta	1,200
Ashanti	1,718
Brong-Ahafo	1,905
Northern and Upper Regions	1,060
Total, Ghana	1,468

Source: Based on data derived from Census, 1960, Vol. 3, Table 13, pp. 103-110.

GHANA

FOREIGN ORIGIN POPULATION : NUMBER OF MALES PER 1,000 FEMALES

MAP 10.1.2



SOURCE : Bureau of Statistics, 1960 Population Census of Ghana

notice the high values for the nationals of Mali, Niger, Upper Volta, European countries and Lebanon. Contrast these with the lower than average values for the nationals of Togo, Nigeria and Dahomey. Again, the low values of the latter group tend to be indicative of populations in the process of stabilization.

The Age Specific Sex Ratio is the male ratio per 1,000 females of the members of a specified cohort. Table 10.4.1 shows the age specific male ratios of the foreign origin population, the native population and the total Ghana population in 1960. In every cohort the male ratio of the foreign population is higher than that of either the Native population only or the total enumeration.

The sex ratio is low at lower ages and increases at higher ages. For example, the male ratio at ages 30-34, and 65 and over, are respectively twice and thrice that at ages 0-4 or 5-9 years. The low male ratio among children is probably due to the presence of small children either brought in with the parents or born in Ghana subsequent to their parents entering the country. The increase in the male ratio after the age of 9 is partly due to the fact that parents tend to send their children to their home countries for education, etc., and partly due to age over-statement of the ages of girls. The concern that children must go back home appears to be greater for girls than for boys. There is no evidence that the male ratio relents with advancing age.

The male ratio of the foreign origin population varies from region to region. Table 10.4.2 shows that the value ranges from a high of over 1,600 in Brong-Ahafo,, Ashanti, Accra and Western Regions

to a low of 1,060 in the Northern, Upper, and Volta Regions. The former group of regions are those of net immigration, and the latter group are areas of net emigration and population loss. This explains the close and positive correlations between the distribution of the foreign-born population, and population growth between 1948 and 1960 (rho = 0.697); and male ratio (rho = 0.751). See Table 10.5.

Although males predominated in all regions among the foreign origin population, there were certain districts where females significantly outnumbered males. For example, in Frafra, Kassena-Nankanni, and Tumu districts - all districts of heavy net emigration - the male ratios among the foreign origin population were respectively 635, 375 and 902. Particularly were males short among the Ivorians in Tumu district. This is probably because of the presence of women who entered from the foreign side of the international boundary to marry. The fact that the boundary cuts across groups of the same ethnic affinity has already been noted. The practice of exogamous marriage to be noted later will partly explain the preponderance of foreign women in those border districts.

The foreign origin population was on average older than both the overall population and the native-born; so that whereas 44 per cent. and 55 per cent. respectively of the overall and native populations were aged 15 years or less, only 35 per cent. of the foreign origin population were so described (cf. Table 10.9). Among the foreign origin population those born abroad were older than those born in Ghana, so that whereas only 15 per cent. of the former were aged 15 years or less, 37 per cent. of the latter were so returned. This is to be expected since births subsequent to entry into the country would

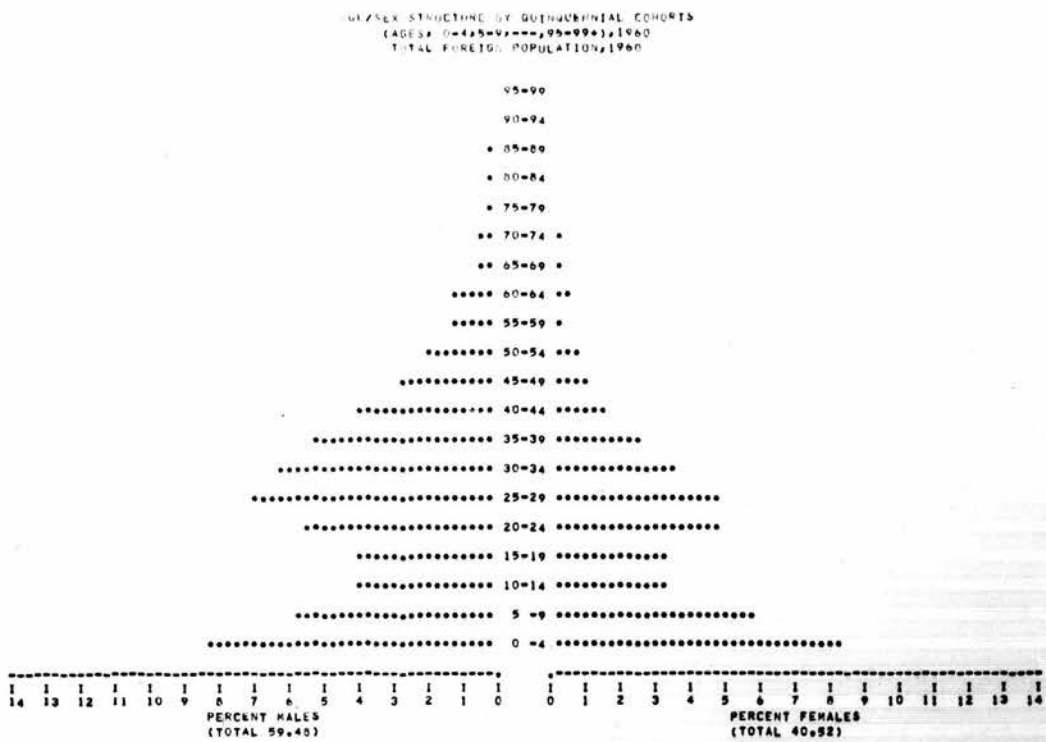


FIG 10.1.1

SOURCE: based on Census, 1960

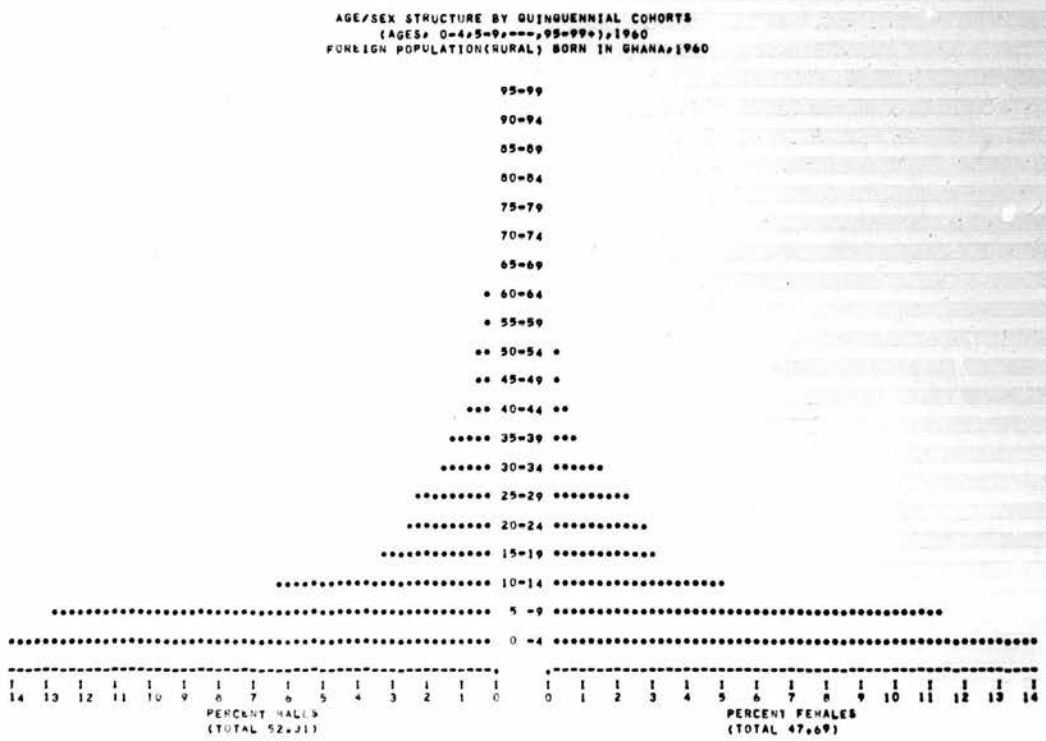
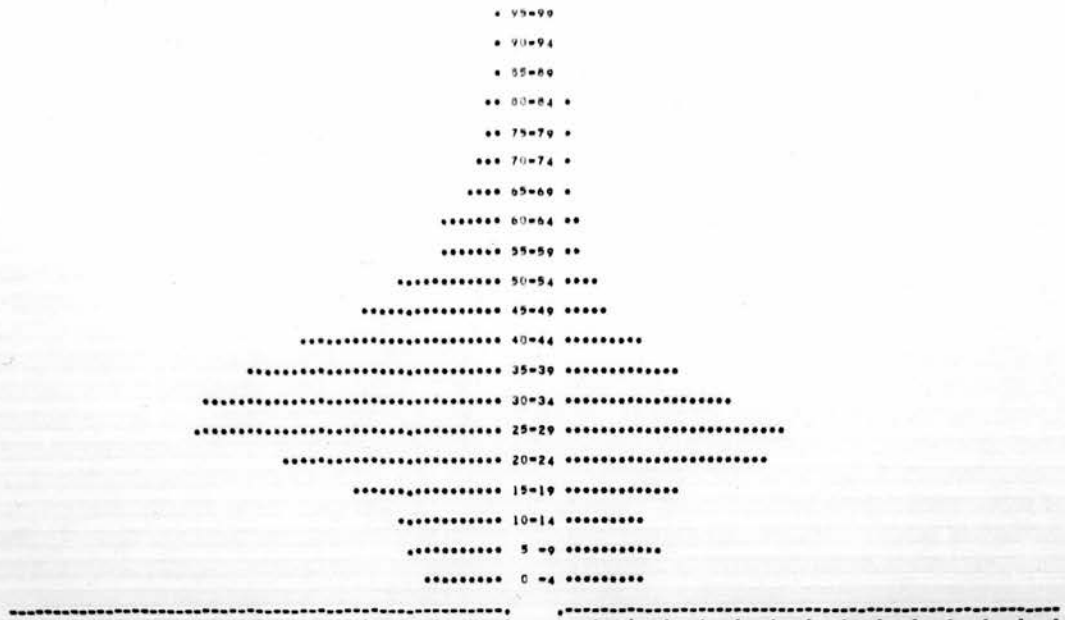


FIG 10.1.2

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,---,95-99+),1960
FOREIGN POPULATION(RURAL) BORN ABROAD,1960

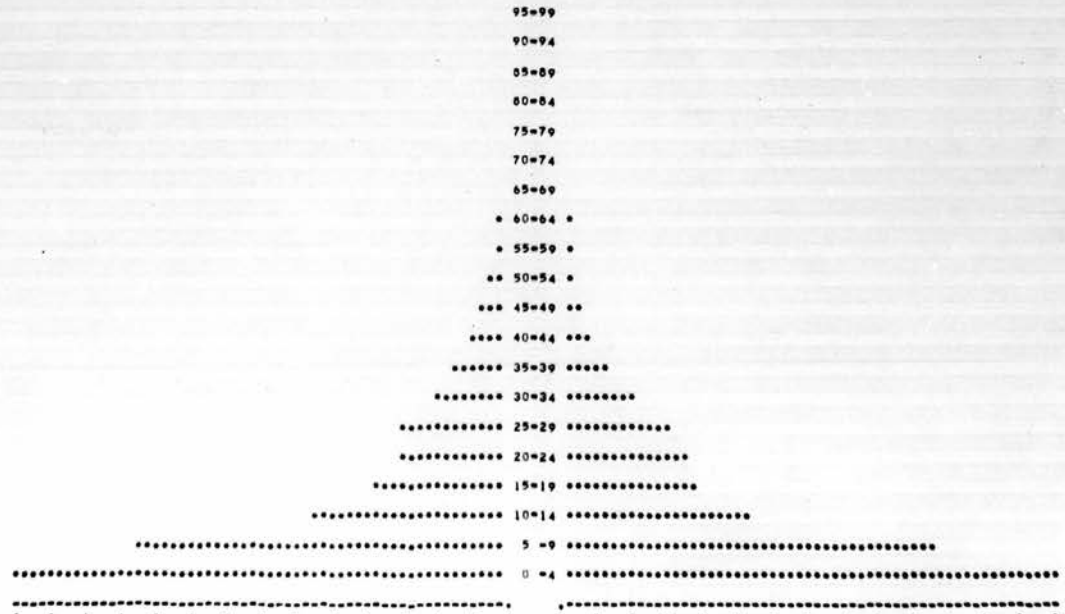


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 1/8TH OF ONE PERCENT

FIG ID.1.3

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,---,95-99+),1960
FOREIGN POPULATION(URBAN) BORN IN GHANA,1960

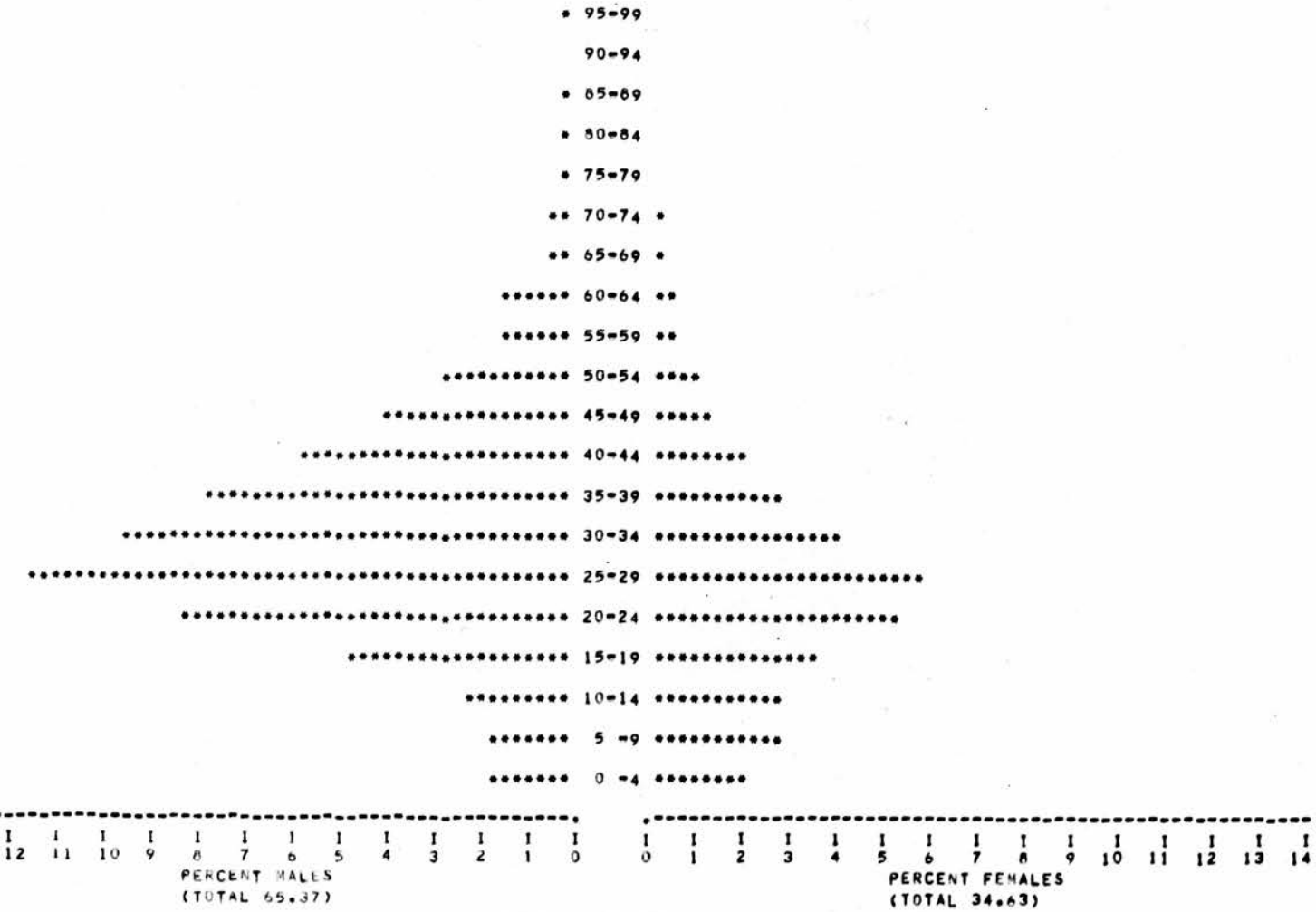


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 1/8TH OF ONE PERCENT

FIG ID.1.4

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES, 0-4,5-9,---,95-99+),1960
FOREIGN POPULATION (URBAN) BORN ABROAD,1960



reduce the average age. There is little evidence that the foreign origin population resident in the urban areas were on average substantially older than those in the rural areas.

Figs. 10.1.1 to 10.1.5 are the age-sex pyramids of the foreign origin population. Fig. 10.1.1 represents the entire foreign population; Figs. 10.1.2 to 10.1.4 show the age structure according to place of residence. At the bottom of each pyramid is shown the per cent. of males or females in the total population. For example, Fig. 10.1.1 shows that males accounted for 59.48 per cent.; and females for 40.52 per cent.; similarly, males accounted for 65 per cent. of the foreign-born resident in urban areas, and females 35 per cent. Clearly, the male ratio of the urban areas were significantly higher than the non-urban districts.

Labour Participation Rates and the Dependence Ratios of Foreign Origin Population

The labour participation rate of any population is a measure of the proportion (per cent.) of the given population that is actively employed or which earns its living; it is the ratio of the number of persons in the labour force to the total population. The larger the proportion engaged in economic activities, the higher the labour participation rate. But since not everyone in the normal population is expected to, or can, work for a living, the workers must provide sustenance for the non-workers, e.g., children, nursing mothers, the aged, the infirm; so that the larger number of children and the aged, etc., the lower must be the labour participation rate. Table 10.6.1 shows that the higher the fertility rate the lower is the labour participation rate of the population in question. Contrast the low

Table 10.5.

Association between the distribution of foreign-born population in Ghana and selected demographic variables, Ghana, 1960.

Variable	Value of Spearman's Rho	
	Direct	Inverse
Density of Population, 1960	0.283	
Population change, 1948-60	0.697	
Total population, 1960		-0.067
Male ratio	0.751	
School attendance (past and present)	0.607	
Fertility ratios	0.049	
Per cent of population in places with a population of 5,000+	0.506	
Per cent of population in places with a population of 10,000+	0.562	
Occupations: professional and technical	0.584	
Per cent. of Clerical workers	0.630	
Per cent. of Sales workers	0.713	
Per cent. of Farmers, etc.		-0.529
Per cent. of Miners and Quarry-men, etc.	0.325	
Per cent. of Workers in transport, communication, etc.	0.323	
Per cent. of Craftsmen, food-processing, etc.	0.688	
Per cent. of Service, sports, and recreational workers	0.596	
Per cent. of Population born locally		-0.781
Per cent. of Population born in another locality; same region in Ghana		-0.022
Per cent. of Population born in another region in Ghana	0.506	
Per cent. of Population Christian	0.456	
Per cent. of Population Moslem	0.397	
Per cent. following traditional religion		-0.538
Rural population density per square mile		-0.453
Ethnic homogeneity		-0.453
Per cent. of population aged 20-59	0.248	

+ Values above 0.24 and 0.30 are significant at 95 and 99 per cent. levels respectively.

Source: Based on data derived from Census, 1960, Vols. 1 to 5; Special Reports 'A' to 'E' and computed by the author (see Appendix III).

Table 10.6.1

Fertility Rates, Labour Participation Rate and Labour Dependence Ratio Of Persons According to Their Places of Birth, Ghana, 1960

	Fertility rate per 1,000 women aged 15-44 years.	Labour participation rates in per cent.	Labour Dependence ratio in per cent.
Locally born	1,370	30	2.33
Born in another locality	382	49	1.04
Born in another Region	422	48	1.08
Born abroad	410	55	0.80
Total - Ghana	885	38	1.63

Source: Based on data derived from Census, 1960 Vols 2 and 3.

Table 10.6.2.

Labour Participation Rates and Labour Dependence Rates among Foreign Population in Ghana, 1960.

Country of Origin	Number employed per cent of total population in question.	Labour Dependence Ratio
Ivory Coast	39.8	1.51
Liberia	45.8	1.18
Upper Volta	52.3	0.91
Mali	59.3	0.69
Togo Republic	38.6	1.60
Dahomey	45.0	1.22
Niger Republic	68.7	0.46
Nigeria	45.7	1.19
Other African Countries	50.2	0.96
Lebanon	53.0	0.89
Other Asian Countries	53.8	0.86
United Kingdom and No. Ireland	55.5	0.80
Other European Countries	62.6	0.60
America and Oceania	53.5	0.87
All Foreign Countries	45.5	1.20
Total Ghana Population	38.0	1.63

Source: Based on data derived from Census, 1960, Vols. 4, Table 17, pp. 185-205; Table 19, p. 212-220. Also ibid., Advance Report of Vols, 3 and 4, pp. 73; 77. Special Report, 'E', Table 25, pp. 110-113.

labour participation rates of the locally-born population with that of persons born in another region or in another locality in the same administrative region. In Ghana, the fertility rate is more important for the rate of labour participation than agedness.

The labour dependence ratio is a measure of the dependence load borne by each able-bodied worker in the community; it measures the extent to which each worker must provide for non-workers, either directly or indirectly, or both. If he or she has no family of his or her own, he or she may pay taxes from which common services and facilities will be provided for the community, e.g., education, fire service, defence, recreation, public transport. The labour dependence ratio and the labour participation rates are complementary; the latter is the reciprocal of the former. Of the persons locally-born, 30 per cent. are bread-winners, and 70 per cent. dependants, so that each worker must provide for himself and from two to three other mouths (Table 10.6.2). Alternatively, it may be stated that the labour participation rate of persons born locally is 30 per cent. and the dependence load is 70 (i.e., 100-30) per cent.

All things being equal, the dependence ratio will depend on the age and sex structure of the population in question, its fertility rate, the average size of the family, and the incidence of illness. Given the same level of income, the population with a high dependence ratio or a low labour participation rate must be economically worse off than one with a low dependence ratio and high labour participation rate.

Table 10.6.2 shows that more than 45 per cent. of the foreign origin population are engaged in the labour force, that is, about 50 per cent. above the national average; the value for the native

population as already noted is 30 per cent. (cf. Table 10.6.1). This implies that among the native population one man provides for 3.3 persons (including himself); by contrast, among the immigrant population one worker provides for 2.2 prrsons (including himself). Obviously, unless it causes unemployment, in general the presence of the immigrant workers in Ghana is a clear advantage.

It is clear from Table 10.6.2 that the labour participation rates of the various foreign nationals in Ghana range from under 40 per cent. to more than 68 per cent.; they are below average for the nationals of Ivory Coast, Togo Republic, Dahomey, etc., and above average for those from the United Kingdom and Northern Ireland, other European countries, Lebanon, etc. Nearness to Ghana, low skills, high rates of unemployment, similar social and geographic environments to those of the home countries; and high fertility rates may account partly for the low participation rates of the former group; they probably even enter the country for non-economic purposes, e.g., visiting relations, marriage in the case of women, and schooling. By contrast, the latter group, with high labour participation rates are highly skilled, have come a long way from home, and usually arrive with a definite job in mind and are less likely to be unemployed; some, of course, may be temporary visitors, but sheer distance and expense of travelling alone make it necessary that they should enter the country with definite occupational goals and skills.

The former group of foreigners enter the country to look for unskilled jobs, which they do not always find, as lumberjacks, constructional workers, petty traders, hawkers, etc., and for which

the country has vast unused local labour sources; the latter, by contrast, comprise of persons frequently highly trained and skilled who enter the country as administrators, teachers, technicians, industrialists, etc., of which the country stands in great need. Economically and socially, therefore, the latter, with high labour participation rates and low dependence ratios are more desirable immigrants than the former with low labour participation rates and high dependence ratios.

A comparison between Table 10.6.2 and Table 10.2 suggests that the foreign population with high labour participation rates are also highly urbanised, and vice versa; this is so because as already demonstrated, they are mostly engaged in urban-based occupations. The significance of this for the economic motivation of their entry into the country is clear.

It has been shown in the foregoing section that as compared with the overall Ghana population, the foreign origin population is characterised by higher average age and male predominance; preference for secondary industries, related occupations, and urban residence; high participation rates and low dependence ratios of labour. Its distribution is closely associated with areas of heavy net immigration, population mobility and mixing; high rates of population growth, resource development and economic expansion.

Most immigrants from European and non-West African sources have skills of which the country is in great need: their presence is therefore essential for economic and social development. The same, however, cannot always be said of the immigrants of West African origin

MAP 12.2.D

SOURCE: based on data derived from Census, 1960 and drawn by computer by author.

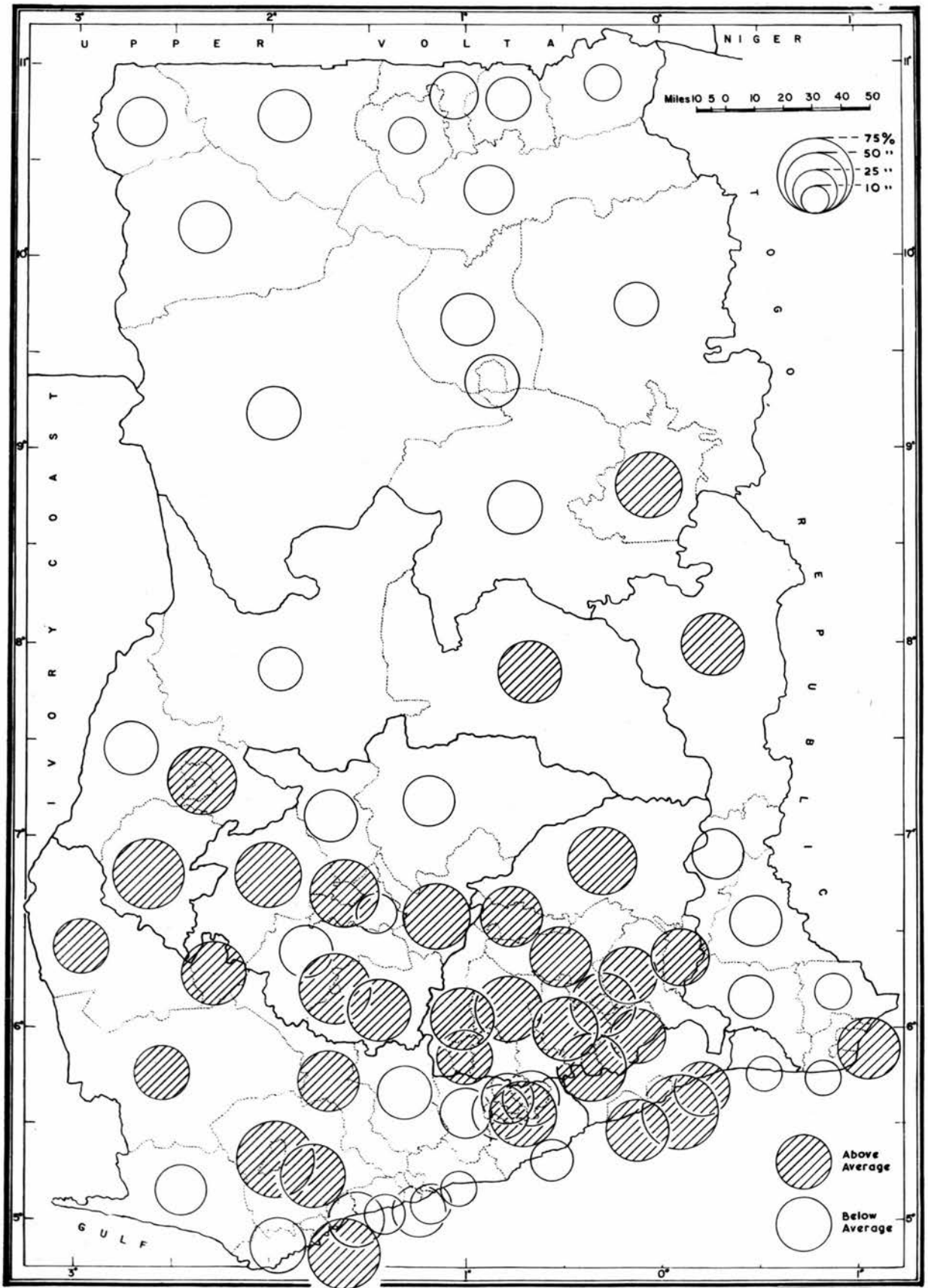
who on the contrary are frequently unskilled, uneducated and have low labour participation rates.

The Locally-Born Population

The population in question represent the non-mobile residual component of the population of any district. Table 10.1 shows that the proportion of locally-born population ranged from about 48 per cent. in Accra Capital District to over 68 per cent. in Northern Ghana; Map 10.2.1 gives the distribution at the local council level. An examination of the population returns for the various districts suggests that the values are very high in most of the Upper and Northern Regions of Ghana, in the Anlo-Ada Sector of south-eastern Ghana, in the Komenda-Mfantsiman-Gomoa area of the Central Region, in Brong-Ahafo North and East, and Kumasi South Districts. By contrast, the values are low in the urban areas, e.g., Tarkwa-Abosso, Tema, Sekondi Takoradi, Nsawam, Kumasi, Sunyani and Accra Capital District; also in Brong-Ahafo South which is not an urban area but a rural district. The former group of areas are characterised by heavy net emigration and low male ratios per 1,000 females (cf. Map 10.3). This is partly due to the lack of job opportunities and economic resources. By contrast the latter group of districts are areas of net immigration, rapid rate of population growth, high male ratios per 1,000 females, good job prospects and economic resources.

Table 10.7 shows that the locally-born or non-migrant population have very low male ratios; the values being below par in every region except the Northern Region. This explains the strong inverse correlation (rho = -0.754) between the distribution of locally-born

GHANA
CHANGE OF RESIDENCE, 1960



SOURCE: Bureau of Statistics, 1960 Population Census of Ghana

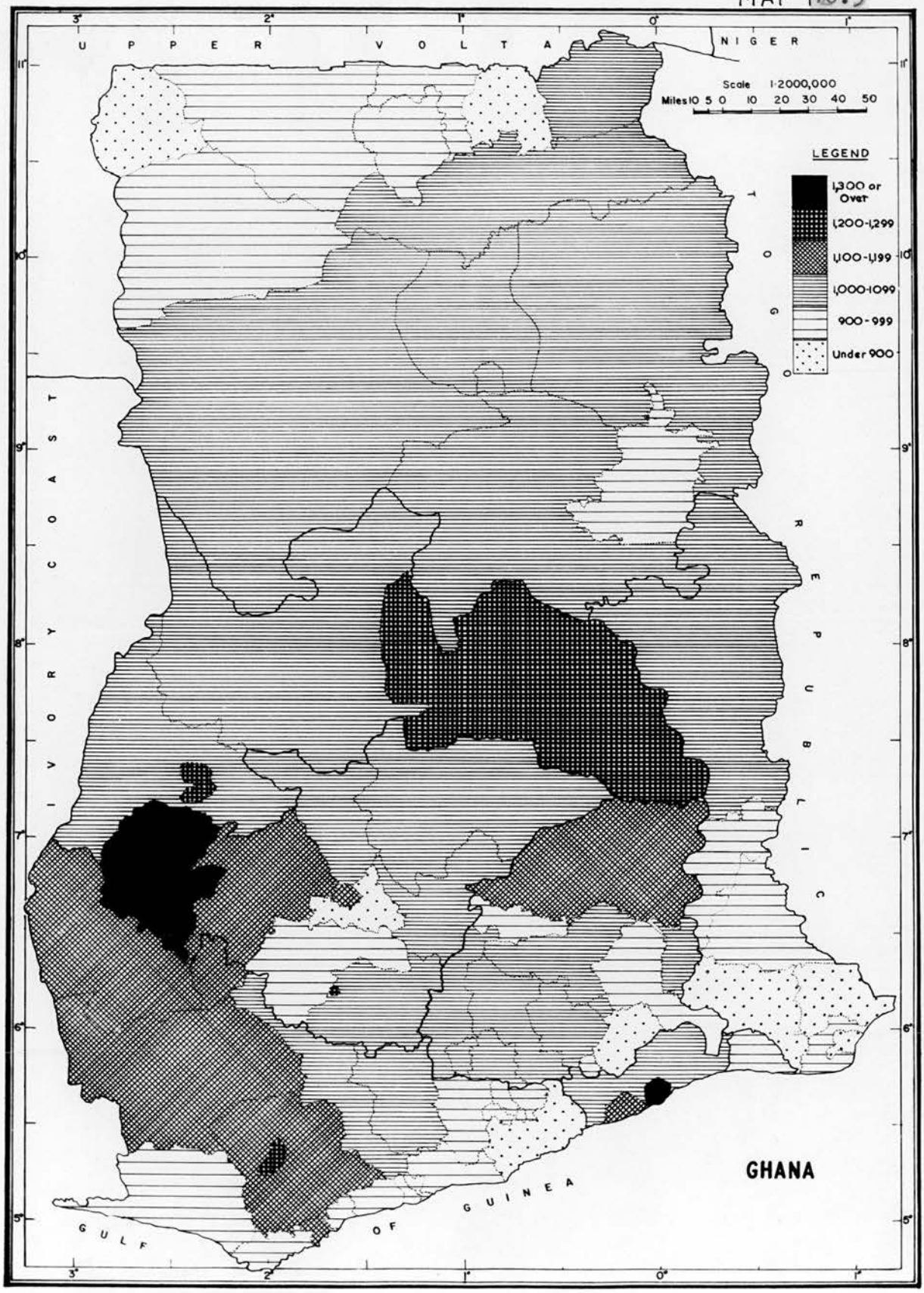
MAP 10.2.2

1012.3

based on Census, 1960

SEX RATIO : NUMBER OF MALES PER 1,000 FEMALES
(TOTAL POPULATION)

MAP 10.3



SOURCE: Bureau of Statistics 1960 Population Census of Ghana

Table 10.7

Male Ratios per 1,000 females according to their Places of Birth and Region, Ghana, 1960

Region	Male ratio by Place of Birth		
	Locally	Another Locality	Another Region
Western (and Central)	950	879	1,451
Accra	952	858	1,229
Eastern	966	877	1,188
Volta	956	795	1,103
Ashanti	898	963	1,293
Brong-Ahafo	976	872	1,398
Northern (and Upper)	1,253	416	1,279
Ghana, overall	1,008	758	1,288

Source: Based on data derived from Census, 1960, Vol.2; ibid., Advance Report of Vols.3 and 4.

population and male ratios. Again, an analysis of the returns shows a strong inverse relationship (rho = -0.549) between the distribution of locally-born population, and population increase but directly with the density of rural population (rho = 0.509). This explains why areas of heavy net emigration and heavy population losses have high proportion of residual population and low male ratios (cf. Appendix III).

If a district were attractive to immigrant workers, their entry would correspondingly reduce the proportion of the locally-born population; on the other hand if pressure on economic resources exerts centrifugal forces on the local population, immigrants would be discouraged; furthermore emigration of the local population would increase the proportion of the locally-born. A high rate of residual population is therefore indicative of economic depression, population stagnation or loss.

Ethnic Homogeneity is the measure in per cent. of the homogeneousness of a population in terms of ethnic description. An analysis of the census returns (Special Report, "E") shows a very close and positive association between the proportion of locally-born in a district and the rate of ethnic homogeneity of its population (rho = 0.870). Both appear to result from the same causes, i.e., absence of net immigration and presence of net emigration; both reflect depressed economic conditions. A district of high rate of ethnic homogeneity is also a district of severe economic depression, population stagnation or decline.

Nevertheless, the high male ratio of the locally-born, and the low rate of ethnic homogeneity sometimes found among certain groups in the Northern and Upper Regions of Ghana suggest that in those districts it is the women who have moved out. It will be shown in the sections that follow that in migrations of the purely local nature, that is intra-regional migration, it is the women who predominate, and not the men.

Distribution of Population born in another locality but in the same administrative region in Ghana

The group referred to above may be known as local, short-distance or intra-regional migrants, because their movements are limited to the same administrative region in which they were born. The problems of identifying them have already been discussed at the beginning of this chapter.

Table 10.1 shows that approximately 21 per cent. of the total enumeration in Ghana were enumerated in a locality other than the one in which they were born, but within the same administrative region, that is they are local migrants within the present definition. The

values range from under 6 per cent., in Accra Central District to about 27 per cent., in the Eastern Region.

Age, Sex and Occupational Structure of Local, Short-distance Migrants

Female predominance is probably one of the most important characteristics of this group (cf. Table 10.9). Table 10.7 shows that the male ratio per 1,000 females ranges from 963 to 416; the overall national male ratio among them being 758, that is, lower than any other group, there being over 25 per cent. more females than males. Note also (Table 10.9) that females predominate at all ages. But this overall average conceals very important local differences. Table 10.8 shows that in some localities in the Northern and Upper regions of Ghana there were more than 10 women to one man among the local migrants. The reasons for this pattern are not yet clear.

The system of exogamous marriages among certain groups in the Upper Region of Ghana has been used to explain the high preponderance of females among the local migrants (Fortes, 1945, pp.4; 46; 47). Nonetheless, an examination of the returns shows that the female predominance among the local migrants is widespread even among people who do not belong to the Northern Tribes. It is found among the Ga-Adangbe peoples of Ada, Manya-Yilo-Osudoku areas of south-east Ghana, among the Ahantas, Shamas and Nzimas of the south-west, etc.; and locally in and around Tantum in the Mfantsiman districts of the Central Region, etc.

Thus the cultural explanation is inadequate outside the North and even in the North itself it is insufficient. The point here is this, even if culture determines that a woman shall marry exogamously, she does not have to emigrate to do so, provided the district is one

Table 10.8

Male Ratios of Local Migrants in Selected Districts in the Upper Region of Ghana, 1960.

Local Council District	Males per 1,000 Females
Western Dagomba	596
Wala	295
Tumu	140
Lawra	282
Builsa	95
Kassena-Nankanni	94
Frafra	112
Kusasi	500

Source: Based on data derived from Census, 1960, Vol.2

Table 10.9.

Age and Sex Structure of Population by Place of Birth, 1960.

	Place of Birth					
	Locally born		Another Locality (Local Migrants)		Another Region (Inter-regional migrants)	
	M. %	F. %	M. %	F. %	M. %	F. %
0-4	13.0	13.1	5.4	5.8	5.2	5.4
5-14	15.9	13.2	10.0	11.4	9.6	11.0
15-24	6.7	7.4	8.1	11.2	13.0	10.7
25-54	11.7	12.5	15.9	24.2	25.6	15.0
55+	3.3	3.2	3.7	4.3	2.9	1.6
Total	50.6	49.4	43.1	56.9	56.3	43.7

Source: Based on data derived from Census, 1960, Vol.3

of expanding economy, job opportunities and heavy net immigration so that the "strangers" whom she must marry will come to her district without her having to move out to find them.

The female emigration so much in evidence in certain parts of Ghana may have been caused partly by the system of land-tenure and inheritance; so that whilst the men can look forward to inheriting land and property, the women have very little to look forward to in those respects. If for the sake of argument everyone who was not resident in his or her locality of birth was taken as a migrant, then both intra- and inter-regional migrants are migrants. In this sense, an analysis of the data shows that in Ghana females far outnumber males among migrants.

Local migrants are on average older than the average for Ghana. Table 10.9 shows that less than 10 per cent. of the former are aged under 5 years as compared with 26 per cent. of the locally-born, and with 19.26 per cent. of the overall Ghana population (cf. Table 10.16): 8 per cent. of the local migrants are aged 55 years or over; whilst only 6.3 per cent. of the locally-born are so described. Among local migrants between the ages of 25 and 55 years, females outnumber males by some 50 per cent. Contrast the age and sex structure of the local migrants with those of the inter-regional migrants, and note particularly the inverse relationship at ages 24 to 54, and also with respect to the totals.

Table 10.3 shows also the distribution of local migrants in the major industries. In general their economic characteristics are intermediate between those of the locally-born and inter-regional migrants. On the whole there is little in this respect that is

outstanding about them. A further analysis of the data shows that the distribution thereof does not correlate significantly with any of the 30 or more demographic characteristics examined, e.g., rate of population growth, male ratios, population densities, per cent. urban population, age structure, fertility rates, occupational structure, etc. (cf. Appendix III).

Population born in another Administrative Region or Long-Distance Migrants

The population referred to above may be known as long-distance or inter-regional migrants to distinguish them from both local, short-distance or intra-regional migrants; and international migrants. The last two groups have already been discussed. Table 10.1 shows that 12.4 per cent. of the total enumeration in 1960 were described as born in another region.

The problems of enumerating such persons have already been discussed; comments here will be limited to some of their immediate practical results.

The accuracy with which they were counted varied from region to region, or even from enumeration area to enumeration area. The agreement between the Census Counts and the P.E.S. counts may be known as the index of consistency. It is the ratio of the P.E.S. to the Census enumeration (Census, 1960, Vol.5, pp.387-390). Table 10.10 shows that the agreement was very low in the areas of heavy net immigration and expanding economies, population growth and mobility; as, for example, Accra Capital District and Ashanti. A further examination at the district level shows very low values for Brong-Ahafo South, Tema, Sekondi-Takoradi, etc. By contrast the level of

agreement was high in the depressed areas, e.g., the Northern and Upper Regions, Volta Region; also in Frafra, Kusasi, Ada, Tongu Districts, etc.

Table 10.10

Index of Consistency between the Census Enumeration and Post-Census Enumeration Survey by Region and Place of Birth, Ghana, 1960

Administrative Region	Males per cent.	Females per cent.
Western Region	91.5	95.3
Accra Capital District	52.3	73.1
Eastern	88.2	89.5
Volta	94.3	94.4
Ashanti	74.1	86.1
Brong-Ahafo	83.8	81.4
Northern (and Upper)	93.0	90.5
Abroad	84.3	83.2

Source: Based on data abstracted from Census, 1960, Vol.5, p.395. Table 29.2.2.

In the areas of heavy net immigration where the index of consistency is low, the values for females, however, are higher than males, e.g., Accra Capital District, Ashanti, Brong-Ahafo South, Tema.

Much of the inconsistency probably derives from ignorance of the regions in which persons were born because of frequent boundary changes within the lifetime of the respondents. For example, just before the Census, the Accra Capital District was an integral part of the Eastern Region, and Brong-Ahafo was part of Ashanti. At the time of the Census, as already noted, the Central Region and the Western Region were one; similarly, the present Northern and Upper Regions formed one block called Northern Ghana (see Chapters 6 and 7).

When the present Accra Capital District was administered as part of the Eastern Region, the entire Ga-Dangbe Tribe/Language Group was

included in the latter region (see Census, 1960 Atlas of Population Characteristics, 1964, Map 9, p.9). The creation of the Accra Capital District as a separate administrative region divided the tribe in question; so that most of the Gas were included in the former region, and the Dangbes in the latter. The practical result of this separation was that respondents were confused as to which region they belonged or were born in, and most of them had lived through several boundary changes.

During 1964-1965 I carried out a survey to ascertain whether people knew the boundaries of the Accra Capital District. Not a single one of the twenty senior Civil Servants, all of whom were Ga-Dangbes resident in Accra, knew the composition and boundaries of the District referred to!

The Tribe in question occupies the area bounded in the West by the Densu River, in the East by the Volta; in the North by the Akwapim-Togo Mountains; and in the South by the sea. Geographically, the area just delimited forms a homogeneous region - physically and demographically. It includes the whole of the Tema-Akosombo Industrial Complex, and most of the potentially useful Tropical Black, Tropical Brown and Tropical Grey soils of the coastal belt; with fish from the sea, lagoons, and Votta Lake, and salt from the lagoons and the sea, etc.; dairy and poultry products from the plains, this should form a closely balanced and integrated region.

For the reasons just set out, it is proposed that an Administrative Region to cover the geographical area delimited above (to be called Ga-Dangbe Region) be formed. This new region will include the present

Ga-Dangbe-Shai L.A., Accra City Council, Tema Development Corporation, and Ada L.A., and Manya-Yilo-Osudoku L.A.

The proposed region will remedy the situation whereby Accra and Tema are severed from their immediate umland and will facilitate, among other things, the future expansion of the city centres.

Distribution of Persons born in another Administrative Region in Ghana

An examination of the data shows that the proportion of the population referred to above varies from more than 30 per cent. in the Accra Capital District to less than 3 per cent. in the Northern and Upper Regions, reflecting differences in job opportunities. Variations are more extreme at the district and local levels. Values are above 40 per cent. for Accra Capital Town, Tema, Brong-Ahafo South, etc.; in all the main urban centres; in the mining areas of Obuasi, Tarkwa-Abosso; in the cocoa areas of Brong-Ahafo South, Kwahu North, and Buem-Krachi District. By contrast the values are low in most of the Upper Region, e.g., Frafra, Kusasi, Kassena-Nankanni, Tumu, Builsa, Lawra and Nanumba; in Ada and Tongu districts of the south-east; and along the seaboard of the central Region from Komenda to Gomoa-Awutu-Effutu District; in Kumasi South, Amansie and Brong-Ahafo East. These are areas of heavy net emigration, female preponderance, high rural population densities, high rate of ethnic homogeneity, and traditional religion. The high labour participation rates in these areas suggested by the census returns probably conceals a good deal of under-employment, reflecting differences in the level of tolerance of economic hardship on the part of the populations concerned (see Chapter 9). Map 10.4 shows the distribution of the population born in another region.

PERCENT OF POPULATION BORN IN ANOTHER REGION IN GHANA, 1960

MAP 10.4

SOURCE: based on Census, 1960

Compare it with Maps 6.1, and 10.5.2.

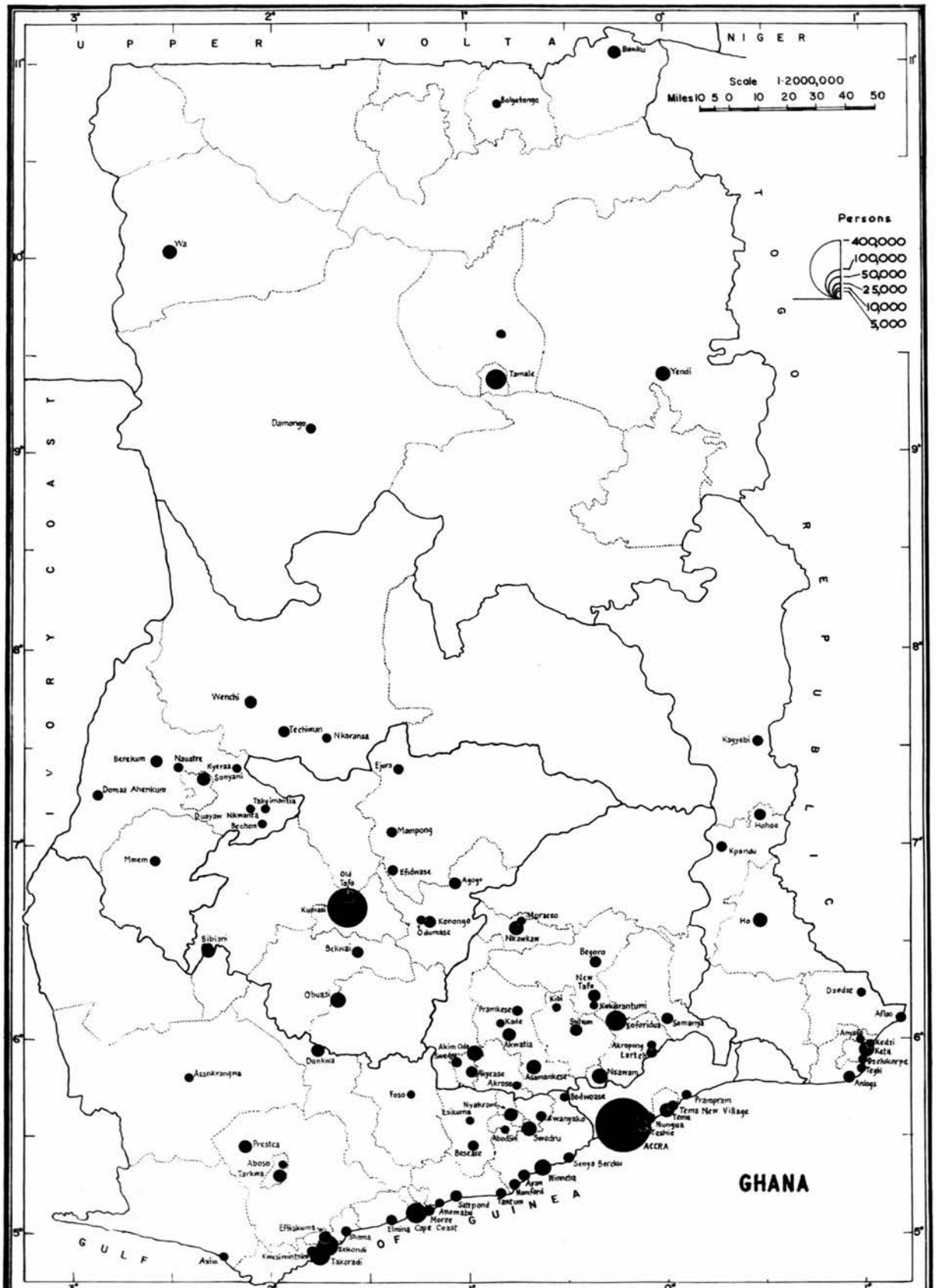
A statistical analysis of the data shows that there is a high degree of association between persons born in another region, or inter-regional migrants, and the inter-censal (1948-1960) rate of population growth (rho = 0.613) and urban population (rho = 0.429), and the distribution of the foreign-born population (rho = 0.506).

Perhaps it would be true to say that the Black Volta divides Ghana into two broad demographic regions: to the south and west are the areas with high proportions of inter-regional migrants; to the north and east by contrast are areas with net deficit of inter-regional migrants, stagnant, or even declining populations. The former zone contains nearly all the important developments in agriculture, industry, transport, education, and urban growth; this partly explains the positive association between inter-regional migration, population growth and urban population. The latter zone serves as the source area of the additional labour needed for the developments in the former zone. Hence the migration gradient is from the latter to the former.

Age-Sex Structure of Persons born in another Administrative Region in Ghana

Male predominance is one of the chief attributes of the group of persons referred to above: there are about 29 per cent. more males than females among them. Table 10.7 shows that the male ratio is significantly above par in every region; high in the Western and Brong-Ahafo Regions; low in the Volta Region. The overall male ratio is 1,288 per 1,000 females. A comparison between Maps 10.3 and 10.4 shows a high degree of association between the male ratio and the distribution of this population. A statistical analysis shows a high

TOWNS WITH POPULATION OF 5,000 AND OVER



SOURCE: Bureau of Statistics, 1960 Population Census of Ghana

MAP 10.5.1

PERCENT OF POPULATION IN URBAN PLACES, 1960

MAP 10.5.2

SOURCE: based on data from Census, 1960
and drawn by computer by author

positive correlation between the two variables (rho = 0.734). This partly explains the close association between the male ratio, and the rate of inter-censal population growth (Table 10.11).

On average, the inter-regional migrants were older than either the locally-born, or the overall Ghana population; so that whereas less than 11 per cent. of the first were aged under 5 years, more than 26 per cent., and 19.2 per cent. respectively of the second and the third were so returned (Table 10.9); between ages 15 and 55 there were over 50 per cent. more males than females. The proportion of persons aged over 55 years was less than among either the locally-born, those born in another locality or the overall population; among the age group in question, there were considerably more males than females. Notice the contrasting age and sex structure between those born in another region and the short-distance migrants. Whilst males predominate in the former, especially at ages 15 and over, females predominate in the latter. The table suggests also that the source of persons aged 15 to 54 among the inter-regional migrants was the locally-born population. The age structure shows clearly that the former were not adequately replacing themselves by means of natural increase.

Fertility rate of Inter-regional migrants

Table 10.6.1 shows that the fertility levels of the inter-regional migrants are lower than that of any other group, and less than half that of the overall population. This explains their higher average age. Migrants in Ghana whether long- or short-distance, have low fertility levels. Data as to the fertility characteristics according to length of residence would show whether or not fertility levels rise

Table 10.11

Rank Coefficient (Spearman's)[1] of Correlation between the Rate of Inter-regional Migration and Selected Demographic Variables, 1960.

Variable	Rho+
Population increase (1948-60)	0.613
Population density(total, 1960)	0.258
Population (rural) density	-0.418
Per cent. urban population (5,000+)	0.429
Per cent. urban population (10,000+)	0.542
Per cent. locallyborn	-0.783
Employment in agriculture	-0.536
Employment in commerce	0.395
Employment in services	0.554
Employment in manufacturing	0.613
Employment in cocoa production	0.439
Per cent. school attendance (6 years+)	0.608
Per cent. Christian	0.471
Per cent. Moslem	0.315
Traditional religion	-0.539
Male ratio (aged 20-59)	0.843
Male ratio (total population)	0.734
Per cent. Foreign-born population	0.506

+ Values above 0.24 and 0.30 are significant at 95 and 99 per cent. levels respectively.

Source: Based on data derived from Census, 1960, Vols. 1 to 4; Special Reports 'A' to 'E'; and computed by author.

[1] I am indebted to Mr. Brian S. Duffield for permission to use his Atlas Autocode program in this work. The program was run at the Regional Computing Centre, Edinburgh University.

with duration of residence - that is, with increasing stabilization of population. Such data are at present not available.

It is suggested that at the next census duration of residence by age and sex be recorded.

Occupational Structure and Residential Characteristics of the Inter-regional Migrants

Table 10.3 suggests that the majority of those born in another region are engaged in non-agricultural industries. So that whereas over 60 per cent. of the total labour force are engaged in agriculture and related activities, only 44 per cent. of the persons born in another region are so described. Contrast with occupation in services, commerce, and mining. Because these are urban-based activities, inter-regional migrants most frequently lived in towns, so that whereas they account for only 12 per cent. of the total population, they constituted over 30 per cent. of the urban population. Compare Maps 10.4 and 10.5.2; the close association between the distribution of urban population and persons born in another region or inter-regional migration has already been noted. The Spearman's rank co-efficient of correlation between the two variables as already noted is 0.429; however, if only towns with a population of 10,000 or more are considered the value is 0.542. Both are significant at the 99 per cent. level of acceptance or over (Table 10.11). Since both inter-regional and international migration are male predominant, and because the data show that both are mostly directed towards the towns, it is easy to understand the male predominance in the towns.

For inter-regional migration within Ghana, it would be probably true to say that as the distance from home increases, and the geographical environment of the host district becomes more and more different, all things being equal, so also does the economic status of the migrants' occupation in the host area improve, as is the chance that he will live in a town. A movement from subsistence farming in the Upper Region into forestry or mining in the Western Region; or into cocoa farming in Brong-Ahafo South; or market gardening in Accra, for example, will be such a change.

The Relationship between Migration of Population and Migration of Labour

Table 10.12 shows the movement of labour between administrative regions. It shows for example that about 14,000 workers resident in Accra Capital District were born in the Western Region, whence they have emigrated; by contrast, about 5,780 workers resident in the Western Region were born in Accra Capital District. On balance, Accra gained about 8,000 in net migration of labour; conversely, the Western Region sustained a corresponding net loss of labour. Examine also the net migrations. The Western Region sent out a total of about 63,000 to all parts of Ghana and received in return about 67,000, and made a net gain of approximately 5,000; Brong-Ahafo gained from all regions; Northern Ghana lost to all regions. These movements will be reflected in the total population; so that those regions which gained in labour force also gained in total population, and vice versa (Engmann, 1965a).

Examine Table 10.13 which shows the distribution according to regions of the migrating population (which includes also the workers). About 13,979 persons resident in the Western Region were born in Accra

Table 10.12

Population of Ghana Nationals Born in a Different Region, 1960
(The Cumulative Effects of Inter-Regional Migration).

Region[1] of Birth	Not enumerated where born but elsewhere in:-							Total sent out	Net Immigration	
	Western	Accra	Eastern	Volta	Ashanti	Brong-Ahafo	Northern		Gain	Lost
Western	-	32,763	41,805	3,494	47,916	9,718	4,592	140,288	-	1,566
Accra	13,979	-	26,050	4,369	8,340	3,167	3,011	58,916	90.109	-
Eastern	39,638	58,802	-	14,052	47,152	12,395	4,054	176,093	-	18,519
Volta	21,982	30,925	51,763	-	16,498	6,895	8,432	136,495	-	94,452
Ashanti	27,411	12,231	16,298	3,446	-	39,751	9,366	108,503	96,563	-
Brong-Ahafo	2,087	1,178	1,509	741	16,215	-	2,651	24,581	84,919	-
Northern	33,625	13,126	20,149	15,941	68,945	37,374	-	189,160	-	157,054
Total Received	138,722	149,025	157,574	42,043	205,066	109,300	32,106	833,836	271,591	271,591

Source: Based on data derived from Census, 1960, Advance Report of Volumes 3 and 4, Table 13.

[1]Regions as defined at the time of Census, 1960.

Capital District; by contrast 32,763 born in the Western Region migrated to Accra, so that Accra Capital District gained about 19,000 from the former.That is to say, for every worker that migrated from the Western Region to Accra Capital District, there were between two and three non-workers (cf. Table 10.12); these could comprise students, children and non-working wives and other relations. Notice that here again, Brong-Ahafo gained from all regions and Northern Ghana lost to all regions; also the large gains made by Ashanti, Accra, C.D., and Brong-Ahafo; and the losses sustained by Northern Ghana and the Volta Region.

No further comments are required. It is probably true to say that in Ghana total population movements reflect labour movements and are directed thereby.

A further examination of the trends at the district or local level would shed more light on the problem, but there are no data based on smaller units than the Administrative Region.

An analysis of the data shows that for every 100 persons enumerated in Accra Capital District and Brong-Ahafo, 18 and 14 per cent. respectively were gained through inter-regional migration; by contrast, for every 100 persons enumerated in Northern Ghana and the Volta Region, 14 were lost through net emigration in each case. Probably therefore the population loss in Northern Ghana through emigration was no greater than in the Volta Region, or in so many other districts, e.g., Mfantsiman, Komenda-Edina-Eguafo, Kumasi South, Amansie, etc. Hence the population deficit returned for the Upper Region was partly due to deficits of net natural growth or declining fertility rates, and

not wholly through net emigration.

Labour Participation Rates of Inter-Regional Migrants

High labour participation rates or low labour dependence ratio is another important attribute of the inter-regional migrant. The other characteristics already noted are low fertility rates, high average age, high male ratio, occupation in non-agricultural, urban-based economic activities, preference for residence in urban areas, etc.

Table 10.6.1 shows that the labour participation rate of the group of people referred to is 48 per cent., and is higher than that for either the overall population, the locally-born, or the total foreign population (cf. Table 10.6.2). A labour participation rate of 48 per cent. means a dependence ratio of approximately 1.08 persons. That is to say each active worker provides for 1.08 other persons.

Table 10.14.1 shows the labour participation rates of inter-regional migrants according to origin and destination; it also shows the total received and total sent out by regions. It shows for example that the participation rate of the population born in the Western Region, but who subsequently migrated to Accra, is 43.1; to the Volta Region, is 28.9, etc.; of the people born in the North who subsequently migrated to the Western and Brong-Ahafo Regions the participation rates are respectively 59.4 and 56.6 per cent.

See the rows captioned (I) Total immigrants received in region and (II) Total Emigrants from region. That part of the table shows, for example, that the participation rate of all immigrants received in the Western Region from all parts of the country is 48.9; by contrast, the rate of all the persons who emigrated from the region

in question to other parts of Ghana is 44.9 per cent. Examine also the values for Volta Region and Northern Ghana. Note the low labour participation rates among persons received in Northern Ghana - a depressed area - and contrast with the low participation rates of persons who emigrated from Accra, Ashanti and Brong-Ahafo.

It will be inferred from the table that migrants who move from an economically depressed area to one of expanding economies and job opportunities have high labour participation rates; by contrast those who move in the opposite direction, i.e., from areas of expanding economies to those of economic stagnation, have low participation rates. For example, the participation rate of the population who emigrated from the Western Region to the Volta Region, as already noted, is 28.9; by contrast, of those who emigrated from the Volta Region to the Western Region, the rate is 50.8. This is quite consistent with the evidence from other sources that economic conditions in the Western Region are better than those in the Volta Region where net emigration has been characteristic Contrast the participation rates of the total immigrant population received in, and those of the total emigrants sent out from, a given region. If the rate for total immigrants is greater than that for emigrants then the economic conditions and resource development of the region in question are above the overall Ghana average (e.g., Brong-Ahafo); by contrast, if the participation rate of the immigrants in a region is lower than that of its emigrants, then the economic conditions, job opportunities and resource development of the region in question appear to be below average.

By this test, Table 10.14.2 suggests that the economic development

Table 10.13

Employed Population of Ghana Nationals Born in a Different Region, 1960
(The Cumulative Effects of Inter-Regional Migration of Labour)

Region[1] of Birth	Not enumerated in Region of Birth but elsewhere in:-							Total sent out	Net Immigration	
	Western	Accra	Eastern	Volta	Ashanti	Brong-Ahafo	Northern		Gain+	Lost+
Western	-	14,140	18,450	1,010	23,660	4,110	1,670	63,040	4,820	-
Accra	5,780	-	12.010	1,270	3,150	1,290	930	24,430	45,100	-
Eastern	18,380	27,140	-	6,070	21,110	5,550	1,880	80,130	-	280
Volta	11,160	16,020	28,640	-	8,220	2,740	3,530	70,330	-	50,990
Ashanti	11,600	5,090	6,700	1,320	-	15,880	2,970	43,560	60,980	-
Brong-Ahafo	950	550	490	280	6,050	-	940	9 260	41,470	-
Northern	19,990	6,570	13,560	3,390	42,350	21,160	-	113,020	-	101,100
Total Received	67,860	69,530	79,850	19,340	104,540	50,730	11,920	403,770	152,370	152,370

Source: Based on data derived from Census, 1960. Advance Report of Volumes 3 and 4, Table 39, pp.63-66

[1]Region as defined at the time of Census, 1960.

and job opportunities in the Volta Region and Northern Ghana are below average; by contrast, conditions in Accra Capital District, Ashanti and Brong-Ahafo Regions are shown to be above average.

The difference between the participation rates of immigrants and emigrants of a region seems to reflect the measure in which the region in question is above or below the overall average in development. For example, the difference for Ashanti is 10.9 per cent. (i.e., 51.0-40.1); the difference for the Western Region is 4 per cent. (i.e., 48.9-44.9); for the Northern Region, minus 22.6 per cent.; for the Volta Region, minus 5.5 per cent. This suggests that, for example, the rate of economic growth in Asharti was greater than in the Western Region; that although both the Volta Region and Northern Ghana had lagged behind the rest of the country, conditions in the former were nonetheless better than in the latter (see Table 10.14.1 and 1.6).

The pattern of development suggested by this table is quite consistent with the net migration trends of both labour and the overall population, other indicators of rapid population increase and economic growth (cf. Table 10.12; 10.13). It also confirms the predominant economic motivation of immigration within Ghana.

Labour Dependence Ratios of Inter-Regional or Long-Distance Migrants within Ghana, 1960

It has been shown that the Labour Dependence Ratios and the Labour Participation Rates have a reciprocal relationship; the value of one derives from the other. The main conclusions drawn from Table 10.14.1 are that migrants from areas of active economic growth and social development (e.g. Tema) to depressed and backward areas (e.g. Frafra), have low dependence ratios; and those from economically stagnant or

Table 10.14.1

Labour Participation Rates of Inter-regional migrants in Ghana, 1960 (in per cent)[1]

Region of Birth	Population not enumerated in the region of birth but elsewhere in:-						
	Western Region %	Accra C.D. %	Eastern Region %	Volta Region %	Ashanti Region %	Brong-Ahafo Region %	North-ern Region %
Western Region	-	43.1	44.1	28.9	49.4	42.3	36.4
Accra C.D.	41.3	-	46.1	29.0	37.8	40.7	30.9
Eastern Region	43.6	46.2	-	43.2	44.8	44.8	46.4
Volta Region	50.8	51.9	55.3	-	49.8	39.7	41.9
Ashanti Region	42.3	41.6	41.1	38.3	-	39.9	31.7
Brong-Ahafo Region	45.5	46.7	32.5	37.8	37.3	-	35.5
Northern Region	59.4	50.0	67.3	58.9	61.4	56.6	-
I: Total Immigrants received in Region	48.9	46.7	50.7	46.0	51.0	46.4	37.1
II: Total Emigrants from Region	44.9	41.5	45.5	51.5	40.1	38.0	59.7

1 Region as defined at the time of Census, 1960.

2 Source: Based on data derived from 1960, Population Census of Ghana, Advance Report of Volumes 3 and 4, Table, 39, pp. 63-66.

3 To obtain the labour dependence ratio (LDR), use the following formula:

$$LDR = \frac{(100\% - \text{Labour Participation Rate})}{(\text{Labour Participation Rate})}$$

depressed areas (Frafra, Tongu, Nanumba) to the fast growing, economically active, areas (e.g. Tema, Akosombo) have high labour participation rates. Consequently, the former have high labour dependence ratios, and the latter low.

Table 10.14.2

Index of Regional Development in Ghana, 1960, based on Labour Participation Rates of Long-Distance Migrants

Administrative Region*	Index of development per cent.	Development level (interpretation)
Western Region	4	Above average
Accra Capital District	5.2	Above average
Eastern Region	5.2	Above average
Volta Region	- 5.5	Below average
Ashanti Region	10.9	Above average
Brong-Ahafo	8.4	Above average
Northern Region	-22.6	Below average
Ghana, overall	0	Average

Source: based on data derived from Census, 1960, Advance Report of Volumes 3 and 4, Table 39, pp.63-66 and computed by author.

* Region as defined at Census, 1960.

Table 10.15 shows the labour dependence ratios of long-distance migrants according to their places of birth and residence.

Note, for example, that the person born in Accra but resident in the North has a labour dependence ratio of 2.24; but the person born in the North and resident in Accra has a dependence ratio of 1.00; the ratio for the person born in Ashanti but resident in the North is 2.15 but that of the person born in the North and resident in Ashanti is only 0.63. This is consistent with the fact that both Accra and Ashanti are more developed than the North. Contrast further the ratios

Table 10.15

Labour Dependence Ratios of Ghana Nationals born in a different Administrative Region, 1960. (The Cumulative Effects of Inter-Regional Migration within Ghana).

Region of Birth[1]	Labour Dependence Ratios of Population not enumerated where born but elsewhere in:-						
	Western Region	Accra C.D.	Eastern Region	Volta Region	Ashanti Region	Brong-Ahafo Region	Northern Region
Western Region	-	1.32	1.27	2.46	1.02	1.56	1.74
Accra C.D.	1.42	-	1.15	2.45	1.65	1.47	2.24
Eastern Region	1.29	1.15	-	1.31	1.23	1.23	1.16
Volta Region	0.96	0.93	0.80	-	1.00	1.52	1.39
Ashanti Region	1.36	1.40	1.43	1.61	-	1.51	2.15
Brong-Ahafo Region	1.20	1.14	2.08	1.65	1.68	-	1.82
Northern Region	1.02	1.00	0.49	0.70	0.63	0.77	-
I: Total immigrants received in region	1.04	1.14	0.91	1.17	0.96	1.16	1.72
II: Total emigrants from region	1.23	1.17	1.20	0.94	1.50	1.63	0.68

Source: Based on data derived from Census, 1960, Advance Report of Volumes 3 and 4, Table 39, pp. 63-66.

[1] Region as defined at Census date, 20th March, 1960.

for Accra and the Volta Region; the Eastern Region and Brong-Ahafo. The rate of economic and social development in Accra has been greater than the Volta Region, etc.

Examine also the last two rows of the Table. Note that in the North the dependence ratio for immigrants was 1.72, and emigrants, 0.68. Where the ratio is greater for immigrants into, than that of emigrants from the region in question, a relative economic and social backwardness is indicated (cf. Volta Region). But where the labour dependence rate of emigrants from is higher than that of immigrants into the region in question (e.g., Brong-Ahafo, Accra, Eastern Region), a relatively rapid economic growth is suggested.

Note that the labour dependence ratio of, say, the Ashanti-born but resident in the North is approximately 3.4 times that of the Northern born resident in Ashanti; again the person born in the Brong-Ahafo but resident in the North has 2.36 times the dependence ratio of his opposite number born in the latter, but resident in the former region. This is quite consistent with contemporary development trends in Ghana.

The direct correlation between the fertility rate and the labour dependence ratio has already been demonstrated (Table 10.6.1). The partial inference here is that persons who migrate from, say, Accra or Cape Coast or Kumasi Town to Frafra or Nanumba or Tongue have a higher dependence load and larger families than those who migrate from, say, Frafra or Nanumba - all economically depressed areas - to Accra, or Tema, or Kumasi, or Buem - economically better-off areas. This is partly so because persons who migrate from Accra or Cape Coast or

Kumasi Town to Frafra or Nanumba or Tongu have a higher dependence load and larger families than those who migrate from, say, Frafra or Nanumba - all economically depressed areas - to Accra, or Tema, or Kumasi, or Buem - economically better-off areas. This is partly so because persons who migrate from Accra or Cape Coast or Kumasi Town to the North go as professional men and women; as teachers, administrators, doctors, technicians, etc. Frequently they have houses provided at subsidised rents and other perquisites as additional inducements; economically and socially, they tend to be superior and are more likely to be accompanied by wives and dependents. They do not normally go to look for jobs; they go on transfer or on promotion and for better opportunities in the same jobs; by contrast persons who emigrate from economically depressed areas, with limited facilities for education and training in useful skills, go to the economically active ones, e.g., the towns and construction sites, as unskilled uneducated, illiterate, and unemployed rustics; frequently with little idea of what they would like to do, or where to live. These sometimes are motivated by abject poverty to migrate and are less likely to be accompanied by wives and dependents. Some of course raise families after they have got stable jobs or have settled; but among the initial migrants the dependence ratio is likely to be very low, and economic motivation for migration among them is likely to be very high also.

A visit to the North shows that the majority of the administrators, teachers, trained technicians, etc., are of southern origin, e.g., Accra, Cape Coast; by contrast most of the unskilled workers in Accra, Kumasi, Sekondi-Takoradi, etc., are from the North and other socially

backward areas. It is recalled that even for census-taking in 1948, educated men had to be drafted from the south to the north.

These educated and often highly skilled professional men who migrate to work in the less developed areas of, say, the North, appreciate the value of education and keep their children in school long after the age of 15; the effect of this would be to raise their dependence ratio. On the contrary, the unskilled, unemployed rustic is himself likely to migrate to look for a job in the towns at or soon after the age of 15 (Engmann 1963). Besides, the average age of the latter is lower than that of the former; this fact also argues in favour of high fertility rate and labour dependence ratio for the former group.

The implications of the last statement for fertility rates are clear. Among migrants the level of fertility is directly related to economic viability; and those who can afford it, have children. Thus, when a population is standardized on the basis of this specific attribute, the birthrate may be directly related to economic and social status. As Vance (1952) put it:

> "First, as family income increases, parents will provide their children with a higher level of living. Secondly, as income increases, parents will increase the number of children they demand."

Age and Sex Structure of the Population of Ghana in 1960

Before concluding this analysis of the effects of migration in Ghana, it would be appropriate to summarize the main features of the age and sex structure of the Ghanaian population. Firstly, the structure of the overall population returned in 1960 will be examined; and secondly, significant differences in the population structure from

place to place will be pointed out, and the reasons for these differences will be suggested.

THE OVERALL POPULATION STRUCTURE

Table 10.16.1 shows the distribution of the overall Ghana population by sex and age; naturally, it reflects the total effects of all the demographic factors inpinging on the population. Table 10.16.2 shows the age structure of each sex only. Contrast with the former table.

General sex and age composition.

Note that the population comprises 50.55 per cent. males and 49.45 per cent. females; there is an imbalance of approximately 1.1 per cent. in favour of the males. For the total population of Ghana this male predominance is statistically significant. But the difference varies from cohort to cohort.

There is a large number of children (approx. 19.26 per cent. of the overall enumeration) under the age of 5 years, and a small number of persons (about 3.2 per cent.) aged 65 years or more. This appears to be a common feature of the population of most countries of West Africa. Corresponding figures for example, for Sierra Leone reported by Clarke (1968) were respectively 17.3 per cent. for children under the age of 5, and 5.1 per cent. for those aged 65 years and over. In both countries the population was male predominant. But the male excess in Ghana appears to be statistically more extreme than that of Sierra Leone; in both countries there was a male deficit among children aged under 5 years. Nonetheless, the Sierra Leone population appears to be slightly older on average than the Ghanaian.

Male deficit between ages 20 and 35 years

The table 10.16.1 shows that in Ghana males predominate between

Table 10.16.1

Population Structure by sex and age (total), Ghana, 1960.

A g e	Per cent. of total population		
	Males	Females	Total[1]
0.4	9.55	9.73	19.28
5-9	7.66	7.48	15.14
10-14	5.32	4.81	10.13
15-19	4.10	3.95	8.04
20-24	3.99	4.80	8.78
25-29	4.14	4.55	8.70
30-34	3.61	3.65	7.26
35-39	2.95	2.66	5.61
40-44	2.47	2.16	4.63
45-49	1.82	1.42	3.25
50-54	1.44	1.21	2.65
55-59	0.88	0.72	1.60
60-64	0.94	0.81	1.75
65+	1.68	1.49	3.17
Total	50.55	49.45	100.00

Source: Based on data derived from Census 1960, Vol. 5 and computed by author in Atlas Autocode.

[1] Slight discrepancies (up to 0.01) are due to rounding-off of errors by the computer.

Table 10.16.2

Population structure by sex and age (partial), Ghana, 1960.

A g e	Per cent. of		
	Males	Females	Total
0-4	18.9	19.6	19.28
5-9	15.2	15.1	15.14
10-14	10.5	9.7	10.13
15-19	8.1	8.0	8.04
20-24	7.9	9.7	8.78
25-29	8.2	9.2	8.70
30-34	7.1	7.4	7.26
35-39	5.8	5.4	5.61
40-44	4.9	4.3	4.63
45-49	3.6	2.9	3.24
50-54	2.9	2.4	2.64
55-59	1.7	1.5	1.60
60-64	1.9	1.6	1.75
65+	3.3	3.2	3.17
Total	100.0	100.0	100.00

Source: Based on data derived from Census, 1960, Vol. 5, and computed by author in Atlas Autocode.

the ages of 5 and 9; and in every cohort aged 35 years or over. Between these two groups, and spanning a period of about 15 years from ages 20 to 34, there is a severe male deficit. This deficit is most pronounced from ages 20-24 years. In Sierra Leone, by contrast, the male deficit occurs from ages 15 to 34, and spans a period of 20 years; that is five years longer than in Ghana.

It should be noted that Clarke (1968, p.276, Table 5) operates on the basis of number of females per 1,000 males, that is, female ratio.

This deficit of young male adults between the ages of 20 and 34 in the population of Ghana is presently difficult to account for satisfactorily.

As already indicated, Ghana recorded a rapid population growth, and heavy male selective international immigration during the period preceding the census of 1960; most of the immigrants were aged from 20 to 34 years. Table 10.2 above demonstrates the high male ratio among the immigrants. Since there are no reliable records of Ghanaian natives who have emigrated and taken up residence abroad, it is difficult to determine the extent of the net immigration.

Table 10.17.10, for example, shows the age specific male ratio of the population aged 15 years and over in Upper Volta - an important source of immigration into Ghana; note the deficit of males between the ages of 20 and 39 years; also that the most severe deficit occurs from ages 20 to 24. This as already noted is also the case in Ghana. The overall male ratio as well as the fertility rate in Upper Volta is lower than that of Ghana; a careful analysis of the data shows also the same bulging of the pyramid from ages 25 to 44 years in the Upper

Table 10.17.10

Number of Males per 1,000 Females aged 15 years and over, and of the total population; number of children aged 0-4 years per 1,000 Females aged 15-44 years: Upper Volta, 1961.

Age Group	Males per 1,000 Females.
15-19	1,108
20-24	729
25-29	813
30-34	784
35-39	865
40-44	958
45-49	1,000
50-54	1,071
55-59	1,000
60-64	1,000
65+	1,286
All ages	1,008

cf. Table 10.4.1 above; also Tables 10.2; 10.17.11 and 10.17.12.

Source: U.N. Demographic Yearbook, 1967, p. 150

Volta.

In Ivory Coast also an important source of immigrants, the overall male ratio per 1,000 females is 1,027. Nonetheless, as in Ghana Upper Volta and Sierra Leone, there is a male deficit among persons aged from 15 to 39 years. These comparisons should suffice in demonstrating that perhaps the male deficit among the age group in question is widespread in West Africa. This requires further investigation. These teenagers would be the survivors of persons born during and immediately after the Second World War (1939-1945).

The medical reports (1944; 1953; pp.15, 19) of Ghana and other official sources are replete with accounts of severe shortages of medical facilities, of an increase in communicable diseases, e.g., venereal diseases, tuberculosis, measles; of severe shortages of food and other materials in common use; an increase in miscarriages, pre- and peri-natal child and maternity death rates (cf. Bing, 1968, pp. 99-102). These poor material conditions of the two decades preceding the census of 1960 may have accounted in part for this deficiency of teenagers.

Emigration of persons of the age group in question does not seem to be a significant factor in the population deficit. On the contrary an examination of the sex structure reveals a significant male predominance among this group;furthermore, the rapid increase in male predominance between the ages of 5 and 19 makes a male-selective net emigration a very unlikely cause of the loss of teenagers.

Two possible explanations suggest themselves:-

1. A female-selective net emigration from Ghana of persons aged between

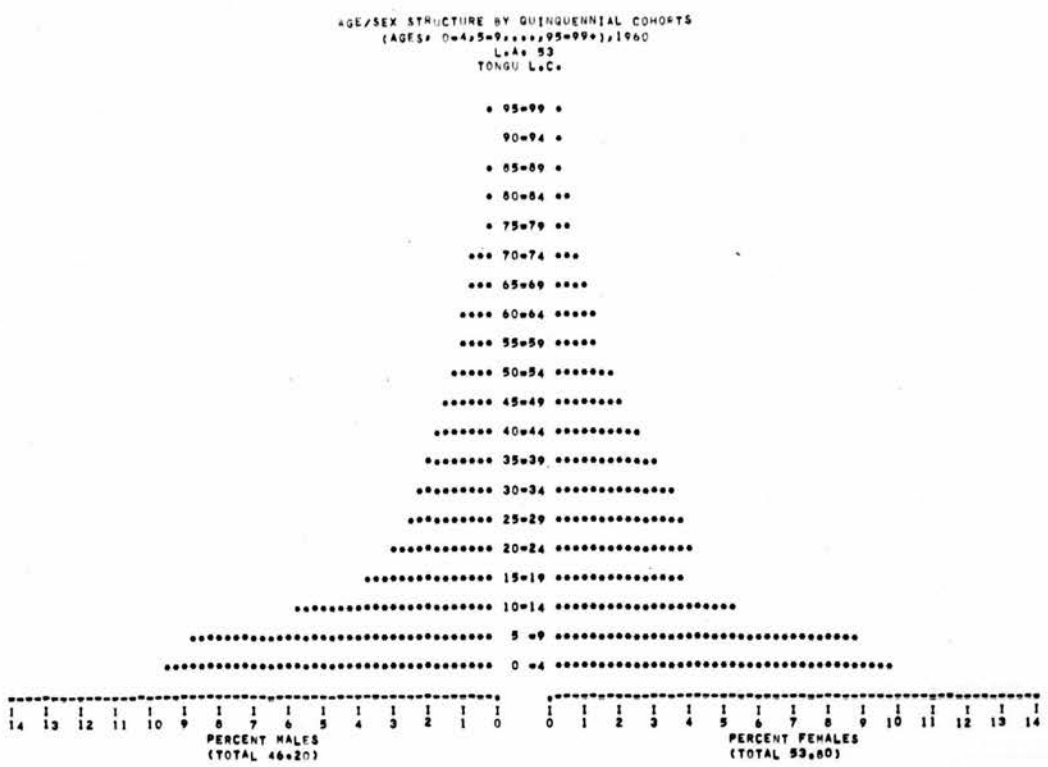


FIG 10.2.1

SOURCE: based on Census, 1960

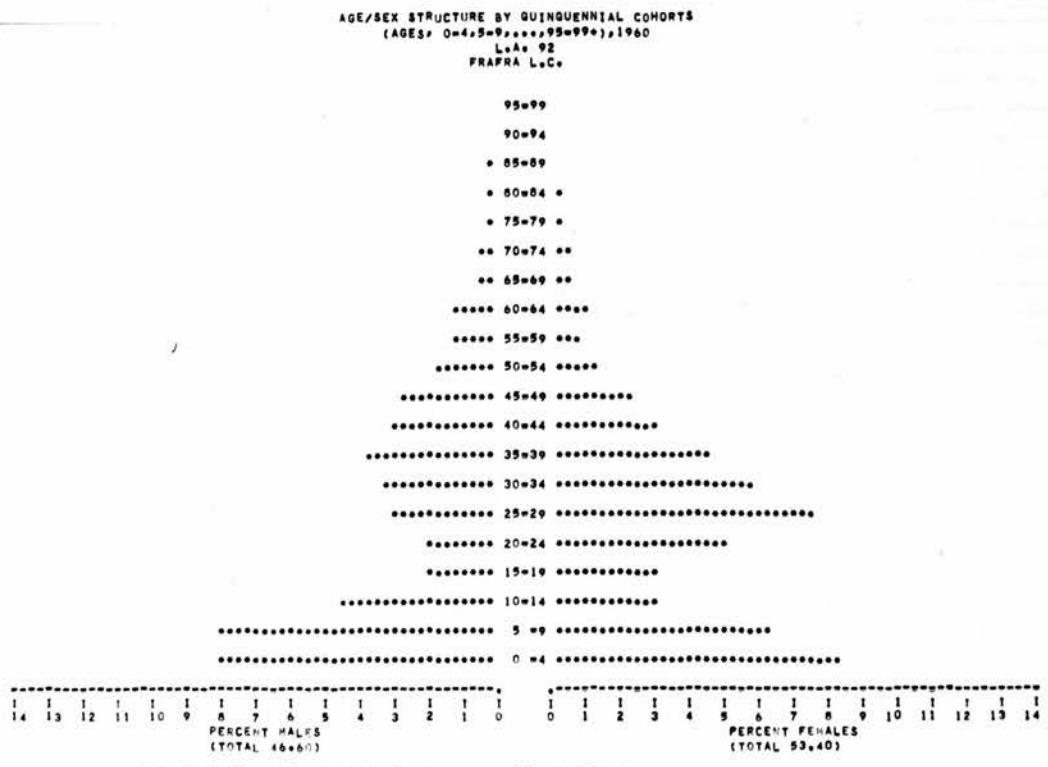
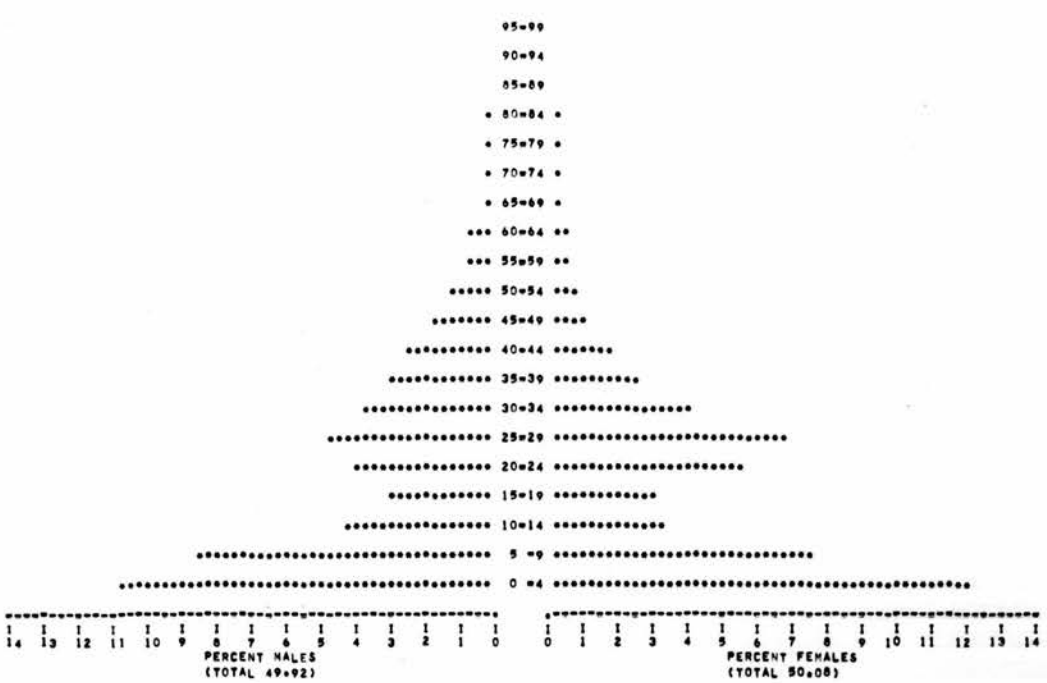


FIG 10.2.2

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A. 82
NANUMBA L.C.

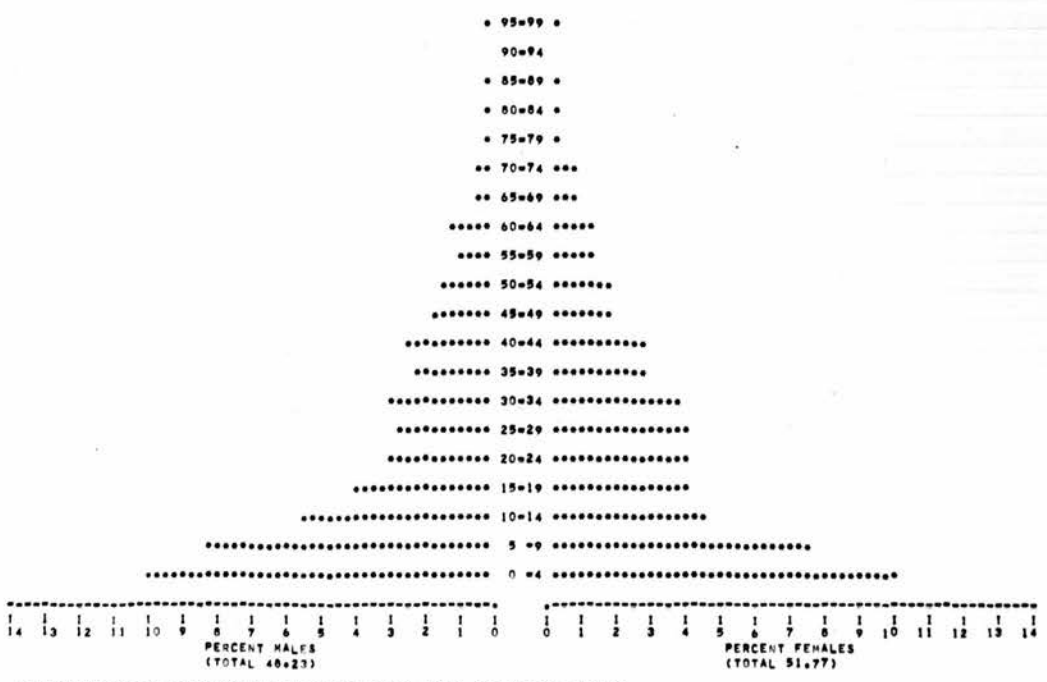


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.3

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A. 6
MFANTSIMAN L.C.

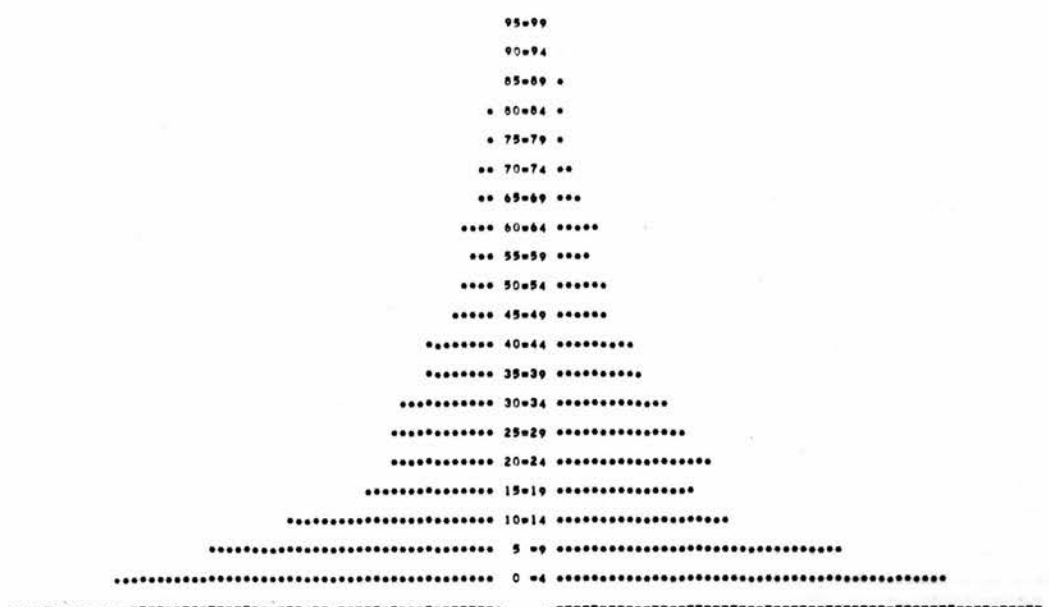


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.4

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A. 65
KUMASI SOUTH L.C.

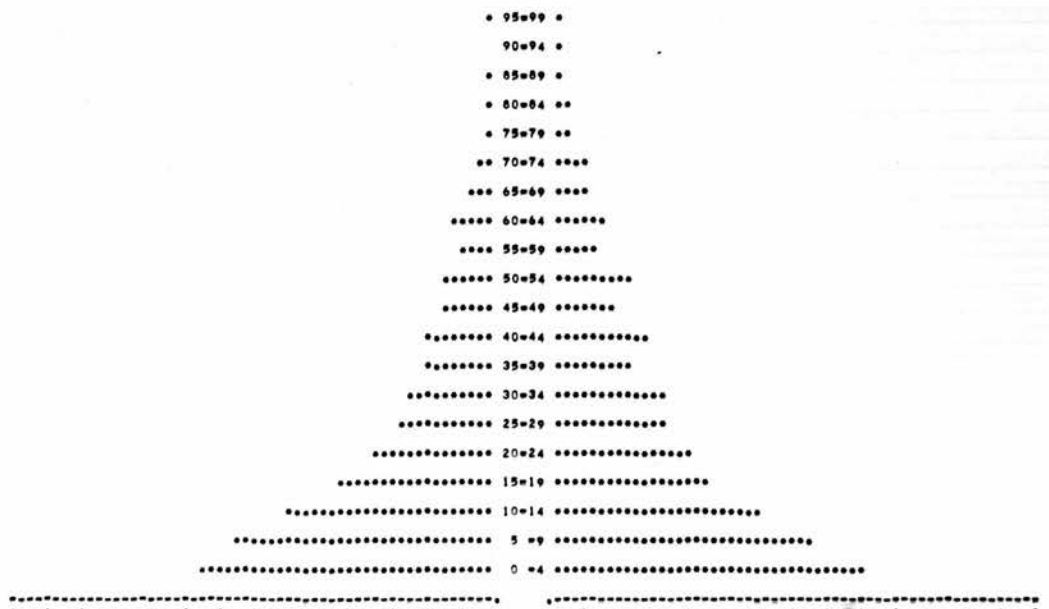


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 19 . 2 . 5

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A. 33
AKWAPIM L.C.

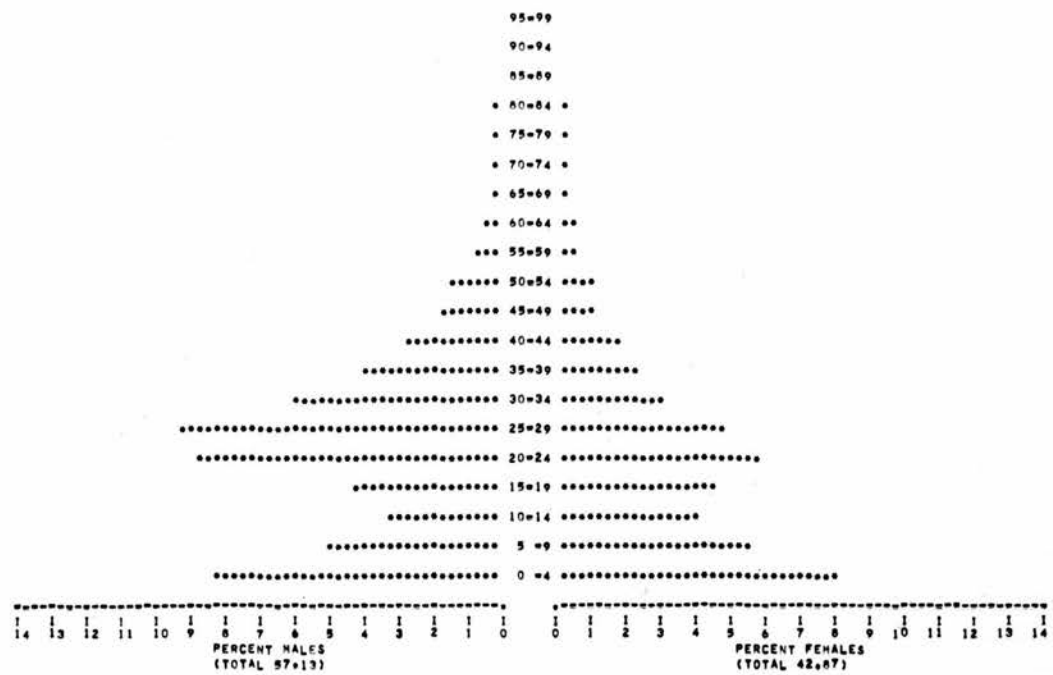


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 19 . 2 . 6

SOURCE: based on Census, 1960

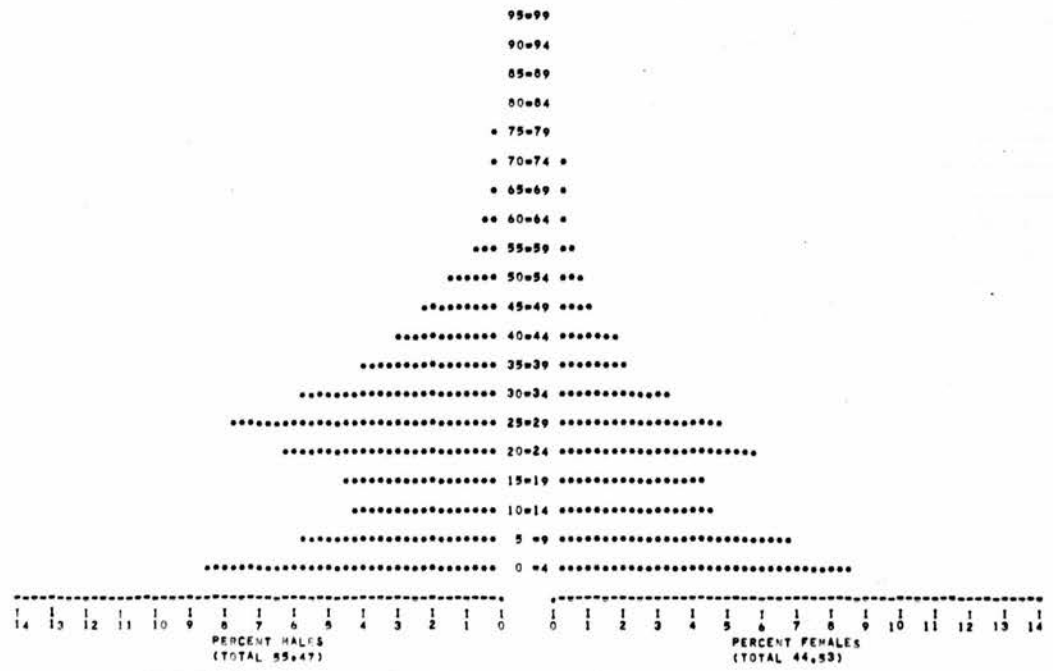
AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0=4,5=9,...,95=99+),1960
L.A. 22
TENA DEVELOPMENT CORPORATION



N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.7
SOURCE: BASED ON Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0=4,5=9,...,95=99+),1960
L.A. 15
TARKWA-ABOSSO U.C.

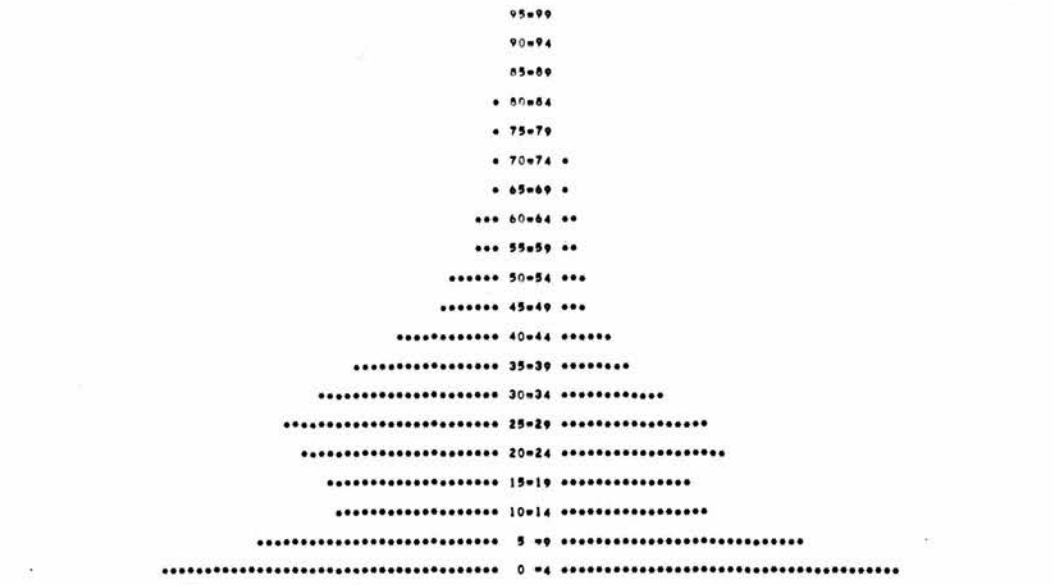


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.8

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,....,95-99+),1960
L.A. 70
BRONG-AHAFO SOUTH L.C.

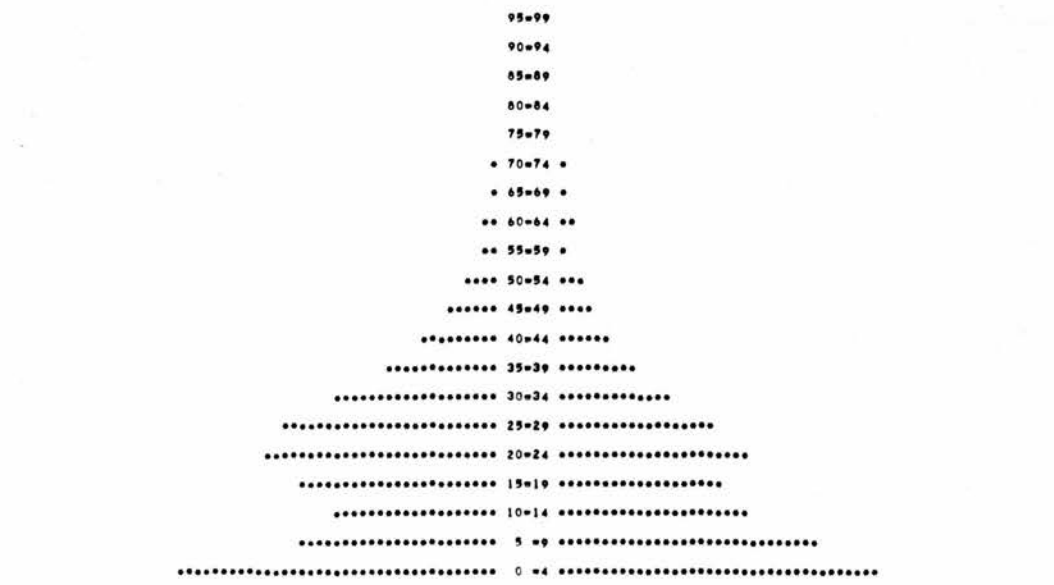


N.B.-BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.9

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,....,95-99+),1960
L.A. 64
KUMASI M.C.

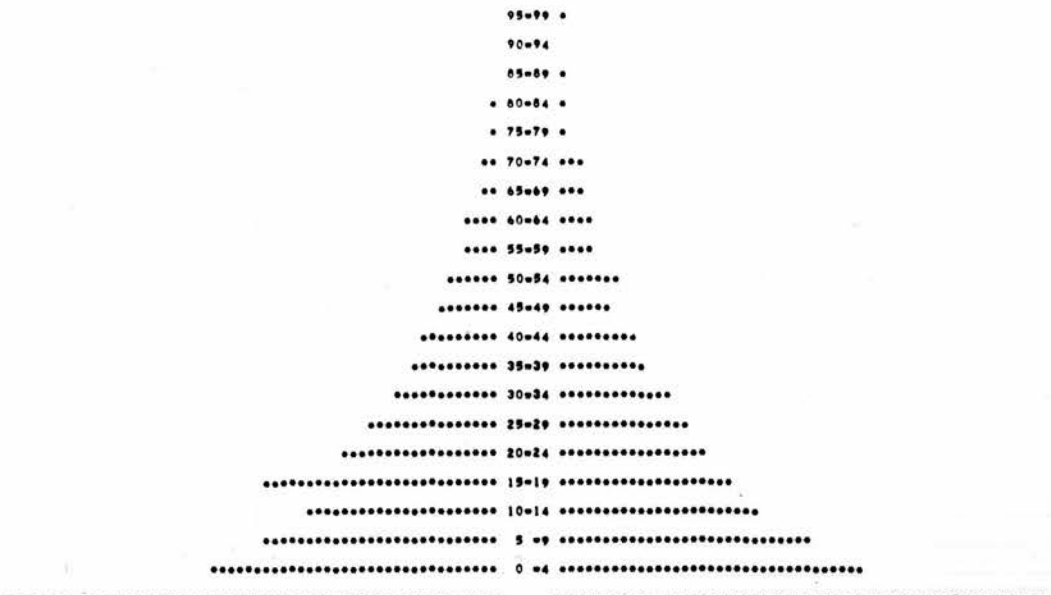


N.B.-BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.10

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A: 5
CAPE COAST M.C.

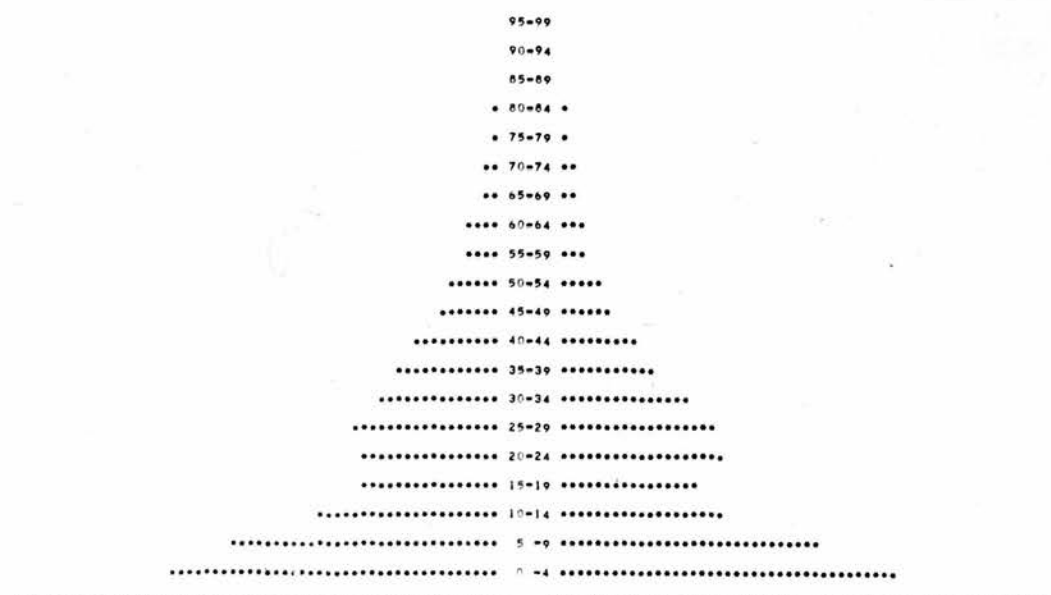


N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.11

SOURCE: based on Census, 1960

AGE/SEX STRUCTURE BY QUINQUENNIAL COHORTS
(AGES: 0-4,5-9,...,95-99+),1960
L.A: 100
TOTAL GHANA



N.B.:BLANK SPACES INDICATE VALUES BETWEEN ZERO AND 0.125 OF ONE PERCENT

FIG 10.2.12

SOURCE: based on Census, 1960

10 and 19 years; or

2. A female-selective death rate among such persons.

But as yet there is very little conclusive evidence of either. Nonetheless, an analysis of the population structure at the district and local levels demonstrates that this teenage deficit is most severe in the rural districts of the Northern and Upper Regions of Ghana; but these are areas of serious economic depression and absence of modern social facilities and severe net emigration; most of these areas are still inaccessible by modern means of transport.

Thirdly, sudden increase of the population numbers of both sexes between the ages of 25 and 34 years is evident from the overall population pyramid. An analysis of Table 10.4.1 shows that this bulge is partly due to the presence of the male-predominant foreign-born population in Ghana. Accordingly, areas which report a heavy net immigration showed this bulging in the middle of their respective population pyramids (e.g. Brong-Ahafo South).

The bulge is more notable for the male portion of the population than the female (cf. Figs. 10.1.3 and 10.1.5) showing respectively the rural and urban populations born abroad). Areas with a large number of foreign-born population reported low proportions of children and large proportions of adults.

If now we turn to the foreign origin population born in Ghana (Figs. 10.1.2 and 10.1.4) a different kind of circumstance appears. For both rural and urban areas, the population pyramid has now a broad base. A very high birth rate is thus suggested among the foreign origin population born in Ghana. Furthermore there is not among these

groups the bulging in the middle of the pyramid which was so characteristic of both the overall and foreign population and of the foreign population born abroad.

Districts which reported heavy net male selective immigration have pyramids which show a conspicuous bulging in the middle and are also skewed to the right in varying degrees (e.g., 'Fig. 10.2.7). By contrast where a district reports heavy female predominant net immigration or small emigration, the pyramids will be skewed to the left (e.g., Frafra, Fig. 10.2.2 and Nanumba Fig. 10.2.3).

Examine again Table 10.16.1 and Fig. 10.2.12 (pyramid of the overall Ghana population); note that for the overall population the middle bulge appears more extreme among the females than the males. This difference in the incidence of the bulging of the pyramid between the Ghana population and the foreign origin population is of great significance for population growth.

This analysis suggests that the presence of the foreign born population is only a partial explanation of the bulge in the pyramid of the overall 1960 Ghana population. This accords with the previous conclusion that the female predominance or male deficit is most severe between the ages of 20 and 34 - the age group which comprises most of the migrants; massive female immigration into Ghana does not seem a satisfactory explanation of this phenomenon, since among the overall foreign population there are, in any case, more males (65 per cent.) than females (35 per cent.).

Emigration of native Ghanaian males and/or male-selective death rate among the natives may be possible factors in this phenomenon of

female predominance among the age group (20 to 34 years); but Table 10.4.1 shows that among the native Ghanaians, the male ratio increases with age from 35 years onwards. Hence the suggestion that the male deficit from ages 20 to 34 years could be due to male-selective high death rate becomes doubtful.

Fourthly, the small number of persons aged 65 years and over is notable. A very insignificant proportion lives beyond 85 years of age. It has been shown that the male ratio of the total population increases with advancing age from 35 years onwards. Hence heavy net emigration of the foreign origin population in their old age does not appear to be a plausible explanation of this phenomenon. A rising death rate with advancing age seems a more probable factor in the reduced number of elderly people in the population.

In the main Ghana's population still has a short life and it will clearly take time before the better health foundations of earlier years of existence translate themselves into better prospects for old age.

Among the foreign born population only, there are more males than females at the ages of 65 years and over. On the whole the proportions of elderly persons aged 65 years or more is significantly greater among the foreign born population than the Ghana-born foreign-origin population. There appears to be little difference in the expectation of life between the urban and the rural foreign origin population. Consequently, the place of residence does not appear to have any significant influence on the length of life of immigrants.

Geographical Differences in the structure of the Population pyramid

For the purpose of this study the population pyramid of each

of the 69 census districts, and of the foreign origin population, according to the place of origin and of residence, were prepared (cf. selected examples, 12.1.1-12.1.5; 12.2.1-12.2.12). Comments follow on significant features and trends from examination of these.

To facilitate the analysis, the country will be divided into two broad zones, viz.: 1. the forest zone and the coastal belts which lie to the south of the Volta and the Akwapim-Togo Ranges. The area just described comprises almost the whole of the Western, Central and Eastern Regions of Ghana, the Accra Capital District, and of the southern part of the Volta Region, south of Krachi district; and 2. the area lying to the north of the region just delimited (Appendix V), and comprising the Northern and Upper Regions, and the Krachi district.

Persons aged from 0 to 4 years

In the South, the proportion of persons aged from 0 to 4 years is high in the forest zone and coastal belts, in both urban and rural areas which reported heavy net emigration, stagnant or declining population; e.g., Mfantsiman (Fig. 10.2.4) Kumasi (12.2.5), Akwapim (10.2.6), Tongu (10.2.1) and Cape Coast (Fig. 10.2.11). The proportion is very high among the locally-born population, and higher still among the Ghanaian-born foreign origin population (i.e., 28 per cent. or more). By contrast, the proportion of the age group in question is low in the urban areas of the South where heavy net immigration and rapid population growth were reported, e.g. Tema (Fig. 10.2.7), Tarkwa-Abosso (Fig. 10.2.8); Sunyani and Obuasi. It is low among the foreign-born immigrants (Fig. 10.1.3; 10.1.5); and also among all types of internal migrants - long and short distance, regardless of their area of residence

or of origin (cf. Table 10.9).

Low Proportion of persons aged from 0 to 4 years in the Northern and Upper Regions.

The proportion of children is low throughout most of the North; the shortage is very severe in most rural areas which reported heavy net emigration, stagnant or declining population, e.g., Frafra. The combination of a small number of children and an increase in the number of adults aged 15 to 44 years found in the North presents very difficult problems of explanation. But it has been shown that the proportion of children is very low among all classes of migrants in Ghana. Could it be that indeed in the North, the population is a great deal more mobile than is readily appreciated? Further investigation of this phenomenon is required.

In general it is probably true to say that child ratios are significantly higher in the South than in the North; that perhaps the distribution of children is one of the most significant factors which distinguish the North from the South; and above all it differentiates most clearly between migrant and non-migrant population.

Shortage of Persons aged from 10 to 19 years

In the South the deficit of this age group, which was earlier shown to be a general feature, in severe in both rural areas and the towns where heavy net immigration, and rapid population growth were indicated, e.g., Brong-Ahafo South, Kwahu North, Tema, Tarkwa-Abosso. By contrast the deficit was less severe, or even completely absent, in those rural areas and towns which reported heavy net emigration, and stagnant or declining population, e.g., Tongu (Fig. 10.2.1), Mfantsiman (Fig. 10.2.4), Akwapim (Fig. 10.2.6).

Among the foreign origin population in general, the deficit of teenagers is severe, but there appears to be no such deficit among the Ghanaian-born population of foreign origin. See Figs. 10.1.1 and 10.1.4. Also there appears to be no such deficit of teenagers among the locally-born native Ghanaian population.

The large number of teenagers reported for certain large towns in Cape Coast and Kumasi, may be explained partly by the presence of the large number of students in the educational institutions.

Deficit of teenagers in the Northern and Upper Regions

In the Northern and Upper Regions, there is a marked deficit of persons aged from 10 to 19 years both in the towns and in rural areas; this is especially so where net emigration and population loss were recorded e.g., Frafra, Kassena-Nankanni, Builsa.

At this point a comparison between Frafra and Tongu would be meaningful.

Frafra (Fig. 10.2.2 and Table 10.17.11) and Tongu (Fig. 10.2.1 and Table 10.17.12) compared

Frafra is situated in the northern savanna woodlands of Ghana. Tongu is located along the Volta in the south of the gorge; the vegetation is the coastal grass and thicket type. Both districts reported substantial population losses between 1948 and 1960 (Map 6.1); also male predominant net emigration, and significant female predominance among the residual populations(Map 10.3). Note that the tables relate to the entire population which includes both the migrant and the locally-born. It appears that the male predominance among emigrants from Frafra is greater than among those from Tongu; in other words, there are more females per male among the migrants from Tongu than

Table 10.17.11

Age Specific Male Ratios: Tongu L.A.

Age Group	Males per 1,000 Females	Predominant Group	Is Observed Difference Stat. Significant?
0-4	979	Females	No
5-9	975	Females	No
10-14	1,067	Males	No
15-24	867	Females	Yes
25-44	662	Females	Yes
45-64	762	Females	Yes
65 and over	788	Females	Yes
All ages	859	Female	Yes

Source: Programmed and computed in Atlas Autocode by Author, From Census, 1960.

Table 10.17.12.

Age Specific Male Ratios: Frafra L.A.

Age Group	Males per 1,000 Females	Predominant Group	Is Observed Difference Statistically Significant?
0-4	978	Females	No
5-9	1,242	Males	Yes
10-14	1,458	Males	Yes
15-24	504	Females	Yes
25-44	629	Females	Yes
45-64	1,329	Males	Yes
65 and over	1,216	Males	Yes
All ages	873	Females	Yes

Source: Programmed and computed in Atlas Autocode by Author from Census. 1960.

those from Frafra. A statistical analysis of the various tribes in Ghana enumerated outwith their traditional home districts shows that this indeed is the case (Engmann, 1965b). The reasons are partly the greater participation of the Tongu females in education, formal vacational training and commercial activities than is the case with the Frafra women. In Ghana the very significant correlation between population mobility on the one hand and education (rho = 0.608), and commercial occupation (rho = 0.619) on the other, suggests that school attendance and commerce facilitates population mobility.

Note the extreme male deficit recorded between the ages of 15 and 44 years in both districts. The minimum male ratio occurs earlier at Frafra (ages 15-24), than in Tongu.

In Frafra, the proportion of children (aged 0-4) is very small, in Tongu by contrast, this proportion is very large. In Frafra there is a marked deficit of persons of either sex aged between 10 and 19 years; in Tongu there appears to be no such deficit of persons of the age group in question. The reason for this difference is not quite clear.

In most areas of Frafra (also Builsa, Kassena Nankanni etc.) water and food are in very short supply from about January to May or June - the aptly-named hungry season (Hunter, 1967). By contrast, most people of Tongu are fisherfolk, and live close to the Volta. Perhaps defective nutrition would explain part of the deficiency of persons aged 10 to 19 years in Frafra; a high death rate among persons aged 10-19 could also be a factor. But other factors may be seriously implicated.

An examination of the economic and social characteristics of

Table 10.17.2

Per cent. of School attendants and of Christians: Frafra and Tongu Districts compared. 1960

Population Characteristics	Per Cent in	
	Tongu	Frafra
Population Christian	83.2	8.6
School attendants of persons aged from 6-14 years, (past and present)	37.9	10.4
Past school attendants of persons aged 15 years and over	11.3	1.1
Present school attendants of persons aged 15 years and over	5.4	0.3
School attendants of persons aged 15 years and over (past and present)	16.5	1.4

Source: derived from Census, 1960. Vol. 3, 1964.

Table 10.17.3

Occupational status of migrants from Frafra and Tongu in Accra, Kumasi, and Cape Coast, according to their places of origin, 1962-63

Origin of migrant	Per Cent		
	Highly skilled	Skilled	Unskilled
Frafra L.A.	6	16	78
Tongu L.A.	28	64	8

Source: data derived from field survey by author, 1962-1963[1]

[1] Engmann, E.V.T. (1963). Some educational and vocational aspects of migration: Tongu and Frafra. Seminar Paper, Department of Geography, Faculty of Social Sciences, University College of Cape Coast, Ghana. Nov. 1963.

the population of the two districts in question reveals a higher rate of school attendants and training in vocational skills in Tongu than is the case in Frafra. The report of the 1960 population census (Vol. 3, 1964) shows that only 3.5 per cent. of the population in Frafra had had schooling for 6 years or more; the corresponding value reported for Tongu was more than 23 per cent.

This difference in educational attainment could profoundly affect the type, quality and the average age of the migrant labour from each district.

Table 10.17.2 shows, for example, that in Frafra, of the children aged from 6 to 14 years only 10.4 per cent. have had any formal schooling; the corresponding figure for Tongu is 37.9 per cent.; again, of the adults aged 15 years and over in Frafra, only 0.3 per cent. were at school in 1960; the value for Tongu was 5.4 per cent. or 18 times the rate for Frafra!

Notice that 8.6 per cent., and 83.2 per cent. of the adult population in Frafra and Tongu respectively were christian. Appendix III shows a very strong and positive correlation between the distribution of christians, and of persons who have attended or are attending school (rho = 0.732). The distribution of christians also correlates positively with occupations in manufacturing (rho = 0.634), Commercial activities (rho = 0.493), service occupations (rho = 0.573), and cocoa farming (cf. Hill, 1956); the distribution of persons who have had formal education correlates positively with occupations in manufacturing, commercial activities and services.

The result of the differences in social characteristics (Tables

10.17.2 and 10.17.3) is that most of the emigrants from Tongu into the towns and other districts are educated and skilled, and work as teachers, clerks, technicians, etc. By contrast, emigrants from Frafra who are less favoured in those characteristics go into less skilled jobs which require little or no prior vocational training or literacy.

Consequently, while emigration from Frafra etc. could take place at earlier ages, say, from about 15 years (cf. Tables 10.17.11; 10.17.12), most potential migrants from Tongu must wait until they have completed their formal training in their home districts, and so may emigrate at much later ages, say, 20 or after that.

Table 10.17.3 summarizes the results of a survey conducted by the present writer between 1962 and 1963. It covered 40 Frafras, and 40 Tongus resident in Accra, 40 Frafras and 40 Tongus resident in Kumasi; and 20 Frafras and 20 Tongus in Cape Coast, selected at random.

For the specific purpose of this analysis, farmers, fishermen and labourers for example, were classed as unskilled. Carpenters, mechanics, gas station attendants, laundry men etc., were classed as skilled; teachers, lawyers, doctors, engineers, as highly skilled. The distinction was not always so clear-cut, and so other factors were frequently taken into account. For example, if a soldier or a policeman reported little or no schooling he was classed as unskilled; if he had a Std. 7 school leaving certificate he was skilled; if the rank of the policeman was higher than that of a sergeant he was considered highly skilled. Similarly, if a teacher was a non-university graduate, he was skilled only; if he had a university degree he was highly skilled etc. A full discussion of the problems of classification

is outside the scope of this present analysis.

Increase in the Number of persons aged from 20-34 years, 1960

The bulging of the population pyramid from ages 20 to 34 years has been shown to be a characteristic feature of the overall Ghana population. The bulge is pronounced in the South wherever large population gains and net immigration were reported, e.g., Tema, Brong-Ahafo South, Tarkwa-Abosso and Kwahu North. It is very much subdued or even completely absent in areas where net emigration or population losses were reported, e.g., Tongu, Kumasi South, Mfantsiman; a statistical analysis shows that in most of such places, there is even a severe shortage of persons in the age group in question, e.g., Tongu.

In the Savannah Woodlands of the Northern and Upper Regions, a conspicuous building of the pyramid in the middle is reported for most areas, irrespective of whether it was a town or a village; or whether the population was stagnant, declining or increasing, e.g., Frafra, Kassena-Nankanni, and Nanumba. Butcher and Huszar (see Ingersoll, ed., 1966) reported a similar pattern for the area around the proposed second Volta Lake at Bui, situated about 10 to 15 miles from the Ivory Coast border in the Volta Gorge.

A careful study of the available data suggests that the bulging of the pyramid in the middle is greater in the Northern and upper Regions of Ghana, than is the case in the regions to the south. This is curious in view of the fact that net migration is from the Northern and Upper Savannah Regions of Ghana to the Forest and coastal zones of the South.

Could it be that as the population migrates from the North to the

south, it is replaced by fresh waves of immigrants; if this is so, could it also be that some persons were reported as born in Ghana who indeed were immigrants from other parts of West Africa? Or that the population of the Northern savannah woodlands of Ghana is more mobile than we readily appreciate?

Persons aged from 65 years and over

In Ghana only a small number of persons live to be 65 years of age or more. An analysis of the data suggests that the proportion of the age group in question is higher in the rural areas than is the case in the urban areas; also, it is higher in the rural areas where net emigration, stagnant or declining population were reported, e.g., Tongu (Fig. 10.2.1), Mfantsiman (Fig. 10.2.4) and Akwapim (Fig. 10.2.6). The proportion is low in those areas which reported heavy net immigration, and rapid population growth, e.g., Tema (Fig. 10.2.7), Brong-Ahafo South (Fig. 10.2.9).

Among the foreign origin population, the proportion of persons aged 65 and over is higher among those born abroad; and low among those born in Ghana (Figs. 10.1.2 and 10.1.3). It would seem therefore that the place of origin of the foreign origin population has a significant influence on its expectation of life.

In the preceding sections, the distributional pattern of the structure of the population, by sex and age, was analysed; also the effects of skills, length of training period, etc. of the potential migrant on the incidence of migration, that is, in time and place, was demonstrated by field survey. In the long run, the type of migrant must reflect the type of labour required in the market of the

receiving districts.

The sections that follow in this chapter will summarize the effects of migration on the population structure of both the sending and receiving centres, because not only is migration a major factor in the redistribution of population, it is also a most potent indicator of geographical differences in economic development.

Effects of Population Migration in Ghana

In this chapter, international immigration, inter-regional migration and local short-distance migration have been identified as the three main types of population movement in Ghana. It has been shown that the migrant population are primarily economically motivated, and are characterized by a higher average age, high male ratio per 1,000 females (except for the local, short-distance, migrants among whom females predominate), low fertility rate, high labour participation rate, low labour dependence ratio; preference for non-agricultural urban-based occupations and industries, and residence in urban areas; their distribution is positively and significantly associated with the rate of population increase, the growth of urban population and economic development.

I t is clear that they will impart those attributes to the receiving or host areas, so that such areas will have high male ratios, higher average ages, high labour participation rates, high percentages of the labour force in urban-based activities and of the population in urban areas, etc. The source regions will, accordingly, lose such attributes, so that they will report low male ratios, low average ages, low labour participation rates and stagnant or even declining

populations.

Tema, Tarkwa-Abosso, Brong-Ahafo South, Kumasi Town exemplify the former group of areas; and Frafra, Tongu, Mfantsiman, Kumasi South, and Akwapim are examples of the latter. As already noted, Figs. 10.2.1 to 10.2.11 are population pyramids of selected districts in Ghana. Figs. 10.1.1 to 10.1.6 represent the population structure of areas of stagnant or declining populations. Figs. 10.2.7 to 10.2.11 show the population structure of areas of growing population (cf. Map 6.1).

Conclusions

In the foregoing analysis, the sources and distribution of the migrant population (which accounted for approximately 40 per cent. of the total enumeration in 1960) were demonstrated. It was shown that the population in question was above average in age, and, with the exception of the short-distance migrant, male predominant; its fertility level was lower, participation rates in labour high, labour dependence ratio low. It most frequently pursued non-agricultural, urban-based economic activities, e.g., commerce and services; mainly because of this it mostly resided in the towns and cities. Furthermore, all migrants, irrespective of source, converged on the same growing points, i.e., the areas with rapid expanding economies and job opportunities. Consequently, such areas reflected in varying degrees the personal attributes of the migrant population.

By contrast the locally-born (or non-migrant) population showed qualities which were the direct opposite of those possessed by the migrants: they had low average age, high birthrates, low participation

in labour, high labour dependence ratios, high rate of stabilization, and showed preference for rural residence. Consequently, they were most numerous - percentage-wise, in areas with stagnant or declining economies and decreasing populations, to which also they imparted their demographic characteristics.

The areas where the migrants converged (or the host regions) rapidly gained population; by contrast, the source areas, that is, the zone of dispersion of migrant population, either stagnated or lost population. Accra, Tema, Brong-Ahafo are examples of the former (see Figs. 10.2.7; 10.2.9): whilst Frafra, Tongu, Mfantsiman represent the latter areas (cf. Figs. 10.2.1, 10.2.2, 10.2.4).

It will be concluded that in Ghana population migration is primarily economically motivated. It is a predominant factor in changes in population structure, distribution and growth. The most important single indicator of geographical differences in the distribution and development of resources, it at once eases population pressure on local economic resources and amenities, and fills, if temporarily, the gaps caused by local shortages of man-power urgently needed for development. The indications are that during the decades ahead it will increase.

CHAPTER 11

SUMMARY AND MAIN CONCLUSIONS

The present author contends that although knowledge of the characteristics of population is vital to an adequate understanding and interpretation of its trends, it is a much neglected aspect of the population geography of tropical Africa; inferences drawn from population data which were not based on a critical analysis of, or did not take into account the personal attributes of the population in question, were liable to be inadequate or misleading.

For the type of treatment suggested above, the population of Ghana, a tropical African country, was used. Main sources of information included both official and unofficial, published and unpublished material, and the results of field investigations carried out by the author.

The absence of reliable data on population trends of Ghana handicapped this type of analysis. To overcome this, the author suggested the establishment of a comprehensive system of registration of vital events in all localities throughout Ghana; the institution of a population register, subject to the confidentiality of information recorded therein being respected; regular annual surveys of all births and deaths which had taken place in the preceding year to supplement the decennial censuses; the maintenance of a system of regular decennial censuses supplemented by quinquennial sample surveys of the population; and occasional surveys of specific conditions or attributes of the population should the need arise, e.g., incidence of guinea-worms and unemployment rates. A list of such possible subjects should be prepared so that each may be investigated in a given year.

It was noted that although the census still remained the most important source of information, its value depended to a large extent on the range of subjects enquired into and reported on; also data derived therefrom must be treated with extreme caution.

After completing this thesis, my attention has been drawn to a publication derived from Enid R. Forde's Ph.D. thesis entitled: The Population of Ghana: A Study of the spatial relationships of its socio-cultural and economic characteristics (1968), the main concern of which was the measurement of economic development. The work was mainly statistical and yet the author did not appear to be aware of the shortcomings of the data she used. She used 52 variables to construct a correlation matrix (ibid., pp.132-133) based on the 69 local councils of 1960; and assumed that values above $\pm$ 0.700 were very significant (ibid., p.21)[1]. The level of significance was not stated. The values given were in any case too high since the table of significant levels gives lower values for a population of 69. She was forced to adopt such unnecessarily high correlation coefficients because she was not selective enough in her choice of variables, many of which were mere reflections of the others and were therefore bound to be highly correlated. For example, per cent. of total population aged 6 to 14 with past school attendance; per cent. of total population aged 6 to 14 attending school at present; per cent. of total population aged 15 years and over and with past school attendance; and per cent. of total population aged 15 years and over attending school at present, all must be highly correlated

[1] For the data in question values above $\pm$0.231 and $\pm$0.326 are significant at 95 and 99 per cent. levels respectively.

because in the present Ghanaian situation those who have had schooling and appreciate the benefits that accrue therefrom are most likely to send their children to school; the distribution of school attendance does not reflect innate or inborn abilities; consequently it must correlate with the per cent. of total population attending post-secondary institutions and universities.

The result of this absence of selectiveness was that high correlation coefficients obtained between certain variables were not meaningful; on the other hand most modest but yet more meaningful associations (which were significant at the 95 or even 99 per cent. levels of significance) were overlooked because they were less than ± 0.500. The use of the distribution of language groups was valueless: the distribution of ethnic homogeneity would be more meaningful as it measures the attraction of a district to immigrants; and also population and labour mobility. Map 6 (ibid., p.88) captioned, "Stages in the Acquisition of the Gold Coast by the British" is misleading since it failed to include mandated Togoland (cf. Map 4.1 above); the boundary between the Northern and Upper Regions of Ghana shown in Map 5 (Forde, 1968, p.83) is very inaccurate; it excluded South Mamprussi from the Northern Region and included it in the Upper Region. In so doing, the number of districts in the former Region was reduced from 7 to 6; whilst that of the latter was increased from 7 to 8; the boundaries between Builsa, Kassena-Nankani and Frafra were also incorrectly shown; the district code numbers shown in Map A1, p.130, do not conform to those used by the Ghana Census Office (see Census, 1960, Vol.1, Map facing p.xviii).

The publication in question (Forde, 1968) gives a very static

picture of the population of Ghana and illustrates some of the unsatisfactory results of an uncritical use of population data and need not detain us any further.

The present author identified the main problems facing correct population enumeration in Ghana as being geographical, socio-cultural and administrative in origin (see Chapter 3); suggestions for improving future censuses included the need to pay attention to political climate, the cycle of market days, seasonal activities, population movements, the ubiquity of place names and the attitudes of the administration; also that subsequent censuses show whether ages were estimated by the enumerator or the censee. For more specific suggestions reference may be made to the chapters concerned.

It is suggested further that the main decennial censuses of Ghana be taken on a system of grids, say 10 kilometer square; about 2,000 such squares will cover the whole of Ghana.

The collection and processing od demographic data by traditional methods take a very long time, and for this reason most otherwise valuable data collected at censuses are never published; the problem is aggravated by the unwillingness of the bureaucracy to allow researchers and other interested persons access to the data in question.

It is urged therefore that computer and other modern data collecting, processing and storage facilities be adopted in Ghana, and subject to confidentiality, it should be possible for students to have access to sections of the reels of the relevant tapes which are germane to their interests.

The study of the population characteristics in Ghana reveals that population migration is an important factor in population change, growth and distribution. Two main demographic zones were identified; first, the area to the north and east of the Volta River characterized by heavy net emigration, population loss and stagnant economies; and secondly, the area to the south and west of the aforementioned river, where heavy net immigration and rapid population growth appear to be the rule; the latter region contains all the mines, nearly all the cocoa and timber producing areas, the ports, almost all the urban centres, (including the three cities), most of the developments in education, industry, road transport and the entire railway system of Ghana. Furthermore four most most important 'Islands of Development' are to be found in this zone.

The migrant population (with the exception of the short-distance migrant) was male predominant; as compared with the rest of the population, it had high average age, low birthrates, high rate of participation in labour, low labour dependence ratio, high mobility and a low rate of stabilization; it most frequently engaged in urban-related, non-agricultural activities and so preferred to live in the towns. Nonetheless with the passage of time it tended to become more like the host community and stabilized. Population migration within Ghana was shown to be predominantly economically motivated.

To help the new arrivals to settle measures should be taken to enable them procure productive work quickly; also leisure, recreational and cultural facilities, etc., should be provided. Each immigrant on arrival must register at the suggested Population Registration Office.

Changes in boundaries of administrative regions and districts remained a major problem in assessing the volumes of both inter-regional and local movements. More research needs to be undertaken to determine the most efficient and suitable boundaries.

As an example, the present writer suggests that a new administrative region (to be called Ga-Dangbe-Shai Region) be formed to comprise the present Accra-Tema City Council, Ga-Dangbe-Shai Local Authority, and the Ada Local Authority. The region in question when formed will stretch from the mouth of the Densu river in the West to that of the Volta in the East; and be bounded on the north by the Akwapim-Togo Mountains, and on eht south by the sea: geographically it will comprise an area, physically, ecologically and demographically homogeneous, with a balanced economy. It will avoid the unsatisfactory situation whereby the Accra-Tema City Council appears to be severed from its immediate umland and facilitate both the future expansion of the city centres, and a unified plan for the entire region.

The boundaries of the Central Region as presently delimited are administratively clumsy and unsuitable; similarly, the present Brong-Ahafo region requires re-examination. Probably Sekyere, now in Ashanti, may be transferred to Brong-Ahafo; and Brong-Ahafo East transferred to Ashanti; otherwise it is difficult to see how Brong-Ahafo East can be administered efficiently from Sunyani, its administrative capital.

An analysis of the data from about 1890 to 1965 suggests that Ghana's population is growing at the rate of between 2.6 and 3.0 per cent. per annum (at the compound interest rate); this includes an

estimated net immigration of about 30,000 to 60,000 per annum. At that rate, it is calculated that the population will about double itself in less than a generation. In itself it is probably not a bad thing. The problem is how to provide a higher level of living for the increasing population; or at least to prevent current levels from falling.

The problem is however complicated by the following considerations: generally, population is at one and the same time both a source and a consumer of wealth: it produces the manpower which it requires for its own development and welfare. The teacher, for example, whilst at the same time a part of the population in question, is also a consumer and a giver of services (i.e., he teaches). All things being equal, the number of teachers etc. that a given population can supply must be limited by the size of the population.

Regardless of its size, each population possesses a land base, and in a closed population (e.g., the world) total wealth does not diminish. Each population has two aspects: quality and size; and mind and matter. The former is capable of infinite development, hence the view that in the long run it could be shown that the total wealth of the population in question should increase rather than decrease. The actual size of the population of Ghana is not known; nor the structure thereof, nor the manner in which it reacts to the various stimuli in its physical and cultural milieu. The array of forces which press in on it is not known. Within the same population the forces will have varying degrees of influences on different individuals, groups, etc.

Poverty and human misery are not limited to very densely populated areas: they may be found equally in very sparsely-peopled but nonetheless potentially wealthy areas (cf. Northern and Southern Ghana). With its associated phenomena, over-population, population pressure, etc., poverty arises primarily because manpower resources are not being properly husbanded.

The concern about the mounting population of the world in general and of Ghana in particular is legitimate; nonetheless, the suggestion to resort to mass application of birth control is a mistaken enthusiasm, a concession to defeat and human selfishness; and an indictment that contemporary knowledge is incapable of meeting this exciting challenge. Perhaps present stocks of human knowledge and technology are in themselves quite adequate, but their full exploitation or application is inhibited or even prevented by the crippling inertia of human usages, cutoms, traditions, institutions, legal systems, religions, etc.

Since 1900 when the population of the world has about doubled, inspite of two world wars and numerous local ones, and the heavy expenditures involved, the level of living of the peoples of the world as a whole appears not to have declined. It has probably risen.

Historical evidence suggests that within the limits set by contemporary knowledge (including science and technology), certain parts of the ancient world developed advanced techniques which raised per capita labour productivity and income to sustain dense populations, and released some members to devote themselves to philosophical contemplation (including research); and this in the face of frequent

killing epidemics and the low level of scientific development. In suitable circumstances, the results of such philosophical contemplation or research should boost labour productivity, and so on. Naturally, with these development grew certain vested interests, institutions, attitudes, etc. Although at the time inevitable or even necessary, it would seem however that through lack of innovation and flexibility, the rulers failed to adapt those institutions in question to changing circumstances, and allowed them to act as a brake on, rather than a goad to, accelerated development and further progress.

It is the theme of this work that most population problems arise partly from the inadequate appreciation of its internal logic, and partly from maladministration of manpower resources. That because of their preoccupation with maps, geographers have tended to emphasize population numbers of tropical Africa - the end product - and have failed to take proper cognisance of the non-numerical aspects thereof, i.e., the internal forces - the cause.

It has been demonstrated in this thesis that the character of the population and its internal logic are crucial to economic planning and social development; that both its structure and spatial distribution are conditioned predominantly by economic factors. This does not rule out the role of sociological forces. Frequently, there would seem to be an absence of accordance, and sometimes even a conflict between contemporary economic facts and social practice; but nevertheless, the latter could be shown to represent lingering effects of the evaluation the society made of economic realities of the time. It is recognized that new ideas or innovations take a

a long time to be accepted by the masses and, frequently, are long out of date before they are put into practice. Sometimes the conflict between economic and social forces are apparent only, and arise from our inadequate knowledge of the nature and workings of economics, or the genesis and character of sociological phenomena. Conversely, the structure of the population, and its spatial distribution determine its economic potential.

The kind of interdependence that must exist between economic development and technological change, improvement in mortality and morbidity conditions, is probably not difficult to appreciate. For example, a reduction in the infant mortality and death rates in contemporary Ghana will increase the average age of the population and the proportion in the economically active ages; it might also decrease the labour dependence ratio and increase the per capita output of labour.

The relationship between migration and economic factors in Ghana were demonstrated; and the effects of the former on demographic trends shown.

What is not clear is the logical connection between economic forces and the level of the birthrate. The answer lies in the internal logic of the population in question. It has been shown that when the population is standardized for occupation, class, or place of birth, the birthrate does not vary inversely as the economic status or social class of the family; that the large family size does not cause poverty. Births occur because the parents think that they can afford the cost of bringing up the children after their <u>image</u> - a very

relative matter both in time and place. The main difficulty arises from differences in the image of the self, or the standard of living or expectations of the parents in question. Within any population there may be as many images as there are persons. The concept of self itself is changeable.

Suppose that there are two families, A and B, with the same level of money income; suppose also that the only thing they spend their incomes on is their children. Family A, with a high standard of living, expects nothing short of university education, a middle to upper class professional job, good housing conditions in the suburbs, etc., for its children. Such children will not be ready for the labour market until after their 21st birthday or later. Contrast with family B whose only expectation is that at the age of, say, 12 the child should be able to participate in illiterate peasant activities, occupations, and low over-crowded housing in a generally poor environment where poor health, high infant mortality rates, malnutrition, etc., are the common everyday lot; most probably, the family in question will employ its own labour. Because of the short period required to make the child of this family ready for the labour market, its birthrate will be higher than that of family A.

It may be urged that the child of family A may not have the innate ability to achieve the level expected by his parents; but this very fact should make his education all the more expensive and make low birthrate an economic necessity.

Hence high birth rate is caused by, and reflects a low standard of living. The manner in which a person makes his living determines the community in which he lives, the group among whom he should move,

both of which condition his thinking and standard of living, values and outlook. As long as the majority of Ghanaians live like vegetables, so long will they react and reproduce like vegetables. What they do is just the outward visible expression of what they think.

The following is an example of the circumstances which might provide the raison d'etre for large numbers of births.

In most of the villages of Ghana where the majority of the population live, agriculture is the predominant occupation; and only 50-60 per cent. of the children survive beyond the age of 15; water supply for ordinary use is both inadequate and of the poorest quality. After a hard day's work in the fields, the farmer returns home, having made the round trip of about 6 to 10 miles; he then has to go to the nearest pool for water, which may be a mile or more away; in the dry zones it may be several miles away; after waiting at the pool for hours, he returns home with, if he is lucky, brackish, germ-filled water, little better than mud, in a four-gallon container. The round trip takes about four hours or more. This is time-consuming. The implications of this situation for health, per capita labour productivity on the farms, capital accumulation, economic and social development are too bizarre to contemplate (cf. Gold Coast Medical Report, 1953, p.22). Reducing the number of births will not bring the pond any closer to him or explain the causes of his ill-health; or render his environmental conditions more congenial. It may even aggravate his conditions by making it more difficult to get the water for domestic use: the same man cannot walk 3 to 5 miles each way to and from the farm; work hard; return home; then go to the pool to

fetch water for cooking, etc. He has very good reasons for fathering large numbers of children.

The conditions which make having many babies a logical and economic necessity must first be removed.

Agriculture, especially small scale peasant subsistence farming, represents the lowest scale of economic and social existence; it utilizes large, illiterate and unskilled labour; the younger probably the better; it does not allow the development and specialization of the full range of human skills and abilities, and is the least conducive to enlightenment and change. As long as the majority of the citizens of Ghana make their living in conditions of ignorance, high mortality and morbidity rates, low productivity, etc., so long will they have reasons to have large numbers of births to compensate at least for the appalling wastage through high infant mortality rates, etc., which is their daily experience. They will need clear evidence that there is a high probability of their babies surviving to be adults, and that most of them will not just grow into vegetables, existing at a very low level of productivity. Their low intellectual environment will not permit them to appreciate polemics on the benefits of birth control.

It is not often realized that those who see Malthusian dangers for Ghana in the prevailing high birthrates, rapid population growth, etc., are culturally in the minority, operate at different intellectual levels, and speak a different "language" from the vast majority. This comparison holds good also at the global level. The people in question are themselves in no danger of lower living levels resulting from their

high fertility; have no need to be told, nor have they need to reduce it; by contrast, the vast majority of the population who are seen as over-reproductive by the intellectual minority in question have, as already demonstrated, perfect justification for maintaining high birthrates. This is the tragic irony of the situation, in which it appears that those who can least 'afford' them have most babies. This again leads back to the question of differences in standards of expectation between sections of the community; the gap must be bridged. Education and mass literacy for everyone of the community is the surest way of at least narrowing the cultural gulf; by the time a person is educated he frequently will not need to be advised to reduce the number of children he has. To advocate a lower birthrate for a rustic, small scale farmer is to expect him, though an illiterate village farmer, to have the same outlook on life (or standard of living) as the middle or upper class, educated, urban dweller: the two live in completely different worlds. This is the crux of the problem, yet birth control appears to be the line of least resistance for many a 'specialist' in demographic matters. The recent controversy over the Pope's encyclical on birth control could be explained by the fact that the problem is seen from an essentially peasant point of view[1]. After all, the majority of the people of the world are peasants.

The question of mass introduction of artificial birth control measures by the government must be approached with caution for the following reasons:

[1] Paul VI, His Holiness the Pope (1968), On the Regulation of Birth: Encyclical Letter...Catholic Truth Society, London.

the standard of living varies from region to region, and even within groups in the same geographical location;

in Ghana, as in most areas of Tropical Africa, resources are at the moment underused; if there are any pockets of unemployment, or under-employment of labour, they reflect maladministration of labour resources - the source of wealth, and miseducation;

because of the high level of illiteracy, and the shortage of skilled men, a safe implementation of birth control if adopted will involve the utilization of the already limited number of trained staff - this is wasteful;

in a non-industrial country such as Ghana, the equipment, etc., for such a purpose would have to be imported from the industrialized countries; this will overstretch the already burdened financial resources of the country;

low birth rate,, or a stable population would not in itself automatically raise the per capita productivity (cf. Frafra and Kumasi), or the total product of labour, or even provide the capital for investment; it would not automatically improve government revenues - they might even decline; the economy may stagnate;

a decline in the supply of labour, without a compensatory improvement in the quality of labour, might create a situation in which it appeared as though labour was paid over and above its true worth. Again the latter should precede the former, not <u>vice versa</u>; otherwise unskilled immigrant labour would find it profitable to slip into the country. The expense of guarding the 2,000 miles or more of land frontiers against them would probably be out of proportion to the expected benefits! The history of demographic trends throughout the

world in the 18th, 19th and present centuries, shows that in most countries economic and social development and a rise in the per capita productivity of labour preceded the decline in the birthrates. The most recent examples are Japan and the U.S.S.R.

At the moment the registration of vital events in Ghana is limited to a few towns which comprise less than 15 per cent. of the total population. The advisory centres for family planning which are being mistakenly advocated will, in all probability, be associated with the limited number of hospitals and health centres whose staffs are already overstretched; the effect of this distribution would be that under present circumstances the advisory facilities would be accessible primarily to the town dwellers, whilst most of the villages which are more important demographically, will hardly be reached.

It was demonstrated from a study of the occupational and industrial structure of the labour force that the Ghanaian economy was dominated by agriculture; nonetheless the statement that Ghana is an agricultural country must not be taken to mean that its agricultural practices are efficient. 60 per cent. of the labour force were returned as farmers, etc. at the 1960 census (and approximately 77 per cent. of the total enumeration lived in rural areas), implying that the farmer produces enough food for himself and two-thirds of another person's needs only. In fact, Ghana cannot produce enough food to feed its citizens. If the large quantities of food imported from abroad, valued at more than the total earnings received from all the Ghanaian minerals and timber sold abroad, are taken into consideration; or the level of living of the Ghanaian farmer, most of whom live below the bread line; or the

widespread presence of nutritional deficiency diseases or the conditions in the rural areas; or the shortages of food in most of the rural districts, are allowed for, it could be shown that Ghanaian agriculture is anything but efficient. The chance to improve the Ghanaian agriculture by the establishment of basic industries to supply its needs was missed between 1921 and 1931.

The cry occasionally heard that people must go back to the land is mistaken and nonsensical. There are already too many people on the land: they get in each other's way. More farmers on the land will probably aggravate the situation as they have done since 1921. What Ghana needs is more efficient farmers able to produce about 3 to 5 times the aggregate volume of all the foods, etc. produced presently from the farms, forests and waters; this will raise their purchasing power and their level of living accordingly. Merely paying them more for what they produce now will not increase production; inflation may result. An inefficient farmer is a poor farmer; the economy will not improve merely by increasing the number of these inefficient workers.

The paradox of the situation is that the call to go back to the land or grow more food is published in the national press by town dwellers; the farmer to whom the message is addressed cannot read; and the townsman who addresses the message hardly knows the conditions on the farms. This, like talks to control births, is another example of the misdirection of effort and resources in Ghana.

There is yet another fallacy which is often heard or read about in the national press: it implies that whilst food was in short supply in the towns, it was being allowed to rot away in the farms for lack

of transport, etc. True, foodstuffs do ripen and rot in the fields. As one travels on the roads in the countryside one may see a few scattered ripe bananas, plantains, mangoes, oranges, etc., wasting away on the trees. But a careful examination of the situation would reveal either that these crops were on abandoned farms or fallows; or that because of their scattered nature they were uneconomical to harvest and transport to the towns; or that they did not warrant the hiring of one lorry; if a lorry was hired, it would mean that the price to the consumer of the product in question would be anything up to ten times or more the current price. The implications of this situation for intensive farming, large scale farming, use of fertilizers on a large scale; the consolidation of fragmented farms, and the formation of co-operatives are clear. With present techniques, the Ghanaian farmer can never grow more food per unit of time, or unit area. The size of farms is dictated by the technology applied and vice versa. The type of farmer who will understand these problems is the literate; but he is not likely to practise agriculture in its present form as found in Ghana, but probably will if it is modernized; and unless he has good prospects of a level of living not lower than that of his schoolmate who has become, say, a civil servant and a town dweller. The connection between literacy, modern farming techniques and agricultural efficiency cannot be overstressed.

An examination of world-wide distribution of agricultural yields shows a very close association between agricultural efficiency and crop yields on the one hand, and industrial and technological advance on the other. The reason for this association is not far to seek. In

advanced countries like Denmark, Britain, the United States and now Japan, industry supports agriculture and vice versa. The former supplies fertilizers, insecticides, pesticides, convenient means of transport, etc., for the benefit of the latter; the latter in its turn supplies the food and raw materials needed for efficient mental and physical exertion of the factory worker. It is this type of reciprocity between agriculture and industry that is lacking in Ghana.

There is a mistaken belief that agriculture and industry are separable. The history of technology of the human race shows that this has never been the case. Mechanization began when man discovered that he could produce more if he used chipped stones instead of his bare hands; he could do more if the blade of the hoe or plough were made of metal instead of wood; if he harnessed animal power he could do more per unit of time than if he depended on his own power unaided, etc. Agricultural productivity in Ghana cannot be increased with present techniques, e.g., the hoe, the cutlass, the dug-out canoe, and daily trips by foot to and from the farm, and extensive head-loading.

Before motorized corn-grinding machines (named after Guggisberg because they were introduced during his governorship) were introduced into Ghana, stone mills were used; each family had at least one person, usually female, who devoted her time entirely to grinding the corn needed for household use. Better-off families had two or three such full-time corn grinders. The introduction of the machines in question, which can do the work of 500 persons or more in a day, has released all those women from that chore! It has facilitated urban living since it facilitates the making of cankey, a popular aliment, for the urban

dweller, Most of the women thus released, numbering approximately one-fifth to one-sixth of the total population of Ghana, have now taken to retail trade, commerce, cankey-making, etc.

Those who advocate an artificial separation of agriculture and industry should bear in mind that agriculture cannot become more efficient than the technology which supports it (cf. the hoe and the mechanical plough). The two must go hand in hand. What has lagged behind in Ghana is industrialization.

Without factories the economy cannot get off the ground and effect rapid growth in labour productivity, nor can it provide for the massive demands of modern agriculture. Industrialization is also a symbol of progress, not an insignificant factor in inspiring enthusiasm for development. It allows for, and encourages a more effective development and utilization of the full range of human abilities and skills, inclinations possessed by the members of the population in question; it allows for occupational differentiation and specialization (cf. Moore, see Spengler and Duncan, eds. 1956, p.519).

Industrialization will improve agricultural techniques and yields. Ghana will then be in a position to sell more agricultural products; and import and use more of the sophisticated industrial products from the advanced countries, e.g., computers, electronic equipment, instead of cement, dry salted cod and pig feet! Its ability to buy from abroad will expand, not contract. An examination of international trade figures suggests that the per capita value of international trade is higher for the advanced countries (e.g., Germany, United States, now Japan, etc.), than for the non-industrialized countries (e.g.,

India, Venezuela and Ghana).

Ghana must be concerned with the mental and physical potential of its citizens. The primary interest of education should be to eliminate illiteracy rapidly. The measure of the success of an educational system is the extent to which it meets the needs of the country in question; the educational standards must closely reflect these needs. In the end the citizens must be adequately clothed, fed, housed and provided with recreational and leisure facilities. Any educational standard that does not take into account the needs of the economy that supports it is parasitic and suicidal.

For example, there are some farmers who can never be efficient farmers, however intelligent; on the other hand, given the opportunity they could be good mechanics, etc. Yet they remain in the rural areas as social parasites and a bad influence. In a diversified economy such a potential mechanic, etc., is allowed to explore and develop his interests, skills and potential to the advantage of all. The more people who must remain in agriculture because of the absence of openings in other sectors of the economy, the larger must be the proportion of such inefficient farmers or misplaced workers. Probably, given the present conditions, about half of the farmers presently in Ghana should not be farming. As long as such persons must remain on the farms, so long will Ghanaian agriculture remain inefficient (cf. retail trade).

For the reasons stated above, the present author suggests that priority be given to industrialization. Plans therefore must not neglect right from the start industries that supply agriculture with

the means of production, e.g., fertilizers, pesticides, and simple modern machinery. At the same time the necessary encouragement must be given to fishing, fish-farming, prom-farming in the numerous lagoons, marshes and rivers; truck gardening, livestock raising, and the production of goat milk. It is not possible to list here all the possibilities, but any new projects must always be undertaken with specific Ghanaian conditions and needs in mind.

Industrialization in Ghana will make for a higher per capita output and consumption of goods and services, a higher level of living, a transformation from a predominantly peasant outlook to an industrial or urban one, and, of course, a low birthrate.

APPENDIX I

Dates of Enumeration, Number of Population returned, and the Characteristics of the Population into which investigations were conducted at successive Ghanaian Censuses from 1891 to 1960

Date of enumeration, and Total Population returned	Population Characteristics which were investigated at Census	
	Form A Areas (rural) (except 1960)	Form B Areas: Principal Towns and villages (except 1960)
1891, April Total popln. returned: 764,613 Cost of enumeration per 1000 popln:6/-	Name of Country Name of Chief Number of inhabitants: Males, Females	Number of Adults: Males and Females Number of children: Males and Females Population- Whites, Mulattoes, Blacks Occupation- in 8 groups Religion- Christian, Mohamedan, Pagan
1901, June Popln. returned: 1,549,681 (excluding Br.Togoland) Cost of enumeration per 1000 popln:3/10d	Same as for 1891	Number of Males, and Females Occupations- same as for 1891
1911, April Total Popln. returned: 1,503,418 (excluding Br.Togoland)	Number of Males and Females in Age Groups: a. 5 years and under b. 6 to 15 years c. 16 to 45 years d. 46 years and over Religion: a. Christian b. Mohamedan c. Other	Names of Inmates Numbers of Males and Females in Age groups as in Form A Occupations (not classified) Tribe and Race Religion, as in Form A Education: Able to read and write Infirmities: a. Blind b. Deaf c. Dumb d. Mentally deranged

Date of enumeration and Total Population returned	Population Characteristics which were investigated at Census	
	Form A Areas	Form B Areas
1921, April (24th April to 24th May) Total popln. returned: 2,298,413 (including Br. Togoland)	Tribe and Race Males and Females in 4 age groups: a. 5 years and under b. 6 to 15 years c. 16 years to 45 d. 46 years and over Religion: a. Christian b. Mohamedan c. Other Education: Able to read and write	Names of Inmates Males and Females in 5 age groups: a. Up to 1 year to be stated in months b. Between 1 year and 5 years c. 6 to 15 years d. 16 to 45 years e. 46 years and over Education: a. Able to read and write b. Unable to read and write Religion: As in Form A Occupation Infirmities: a. Blind b. Deaf and Dumb c. Mentally deranged
1931, April 26th Total popln. returned: 3,163,353 (including Br.Togoland)	Tribe and State Place of Origin a. African of the Gold Coast b. Alien Males; Females; in 3 age groups: a. Under 15 years of age b. 15 to 45 years c. 46 and over Education in and over Standard IV Infirmities: a. Lepers b. Blind c. Deaf e. Mentally deranged	Names of Inmates Males and Females each in 5 age groups as in Form B, 1921 Place of origin - same as in Form A, 1931 Education, same as in Form A, 1931 Occupation Religion, same as in Form B, 1921 Infirmities

Date of enumeration and Total Population returned	Population Characteristics which were investigated at Census	
	Form A Areas	Form B Areas
1948, January to February Total popln. returned: 4,118,450 (including Br.Togoland)	Name of Head person in each compound or settlement Males and Females in 4 age groups: a. Less than 1 year b. 1 year but less than 16 c. 16 years but less than 45 d. 45 years and more Place of Birth: a. Born in the enumerator's district b. Not born in the enumerator's district but in: i. The Colony ii. Ashanti iii. Northern Territories iv. Br. Togoland Tribe Division Education: a. Standard III, IV, VI b. Standard VII or higher Owners and tenants of Cocoa farms Occupations of males: a. Actually cultivating cocoa; whether owners, tenants or others b. Artisans, craftsmen, skilled workmen	Names of individuals in each house or compound Males and Females in 5 age groups, same as in Form B, 1921* Birthplace: a. Born in this town or village b. Not born in this town or village but in another place in: i. The Colony ii. Ashanti iii. Northern Territories iv. British Togoland v. Other British Country vi. Foreign Country Tribal Division Education, same as in Form A Owners and Tenants of Cocoa Farms Occupation Industry Length of Residence in Town or Village: a. Less than 1 year b. 1 year but less than 5 c. 5 years or more Infirmities: a. Totally blind Employment Status: Employee; self-employed; employer; out of work; or retired

* Except that 45 years was used instead of 46.

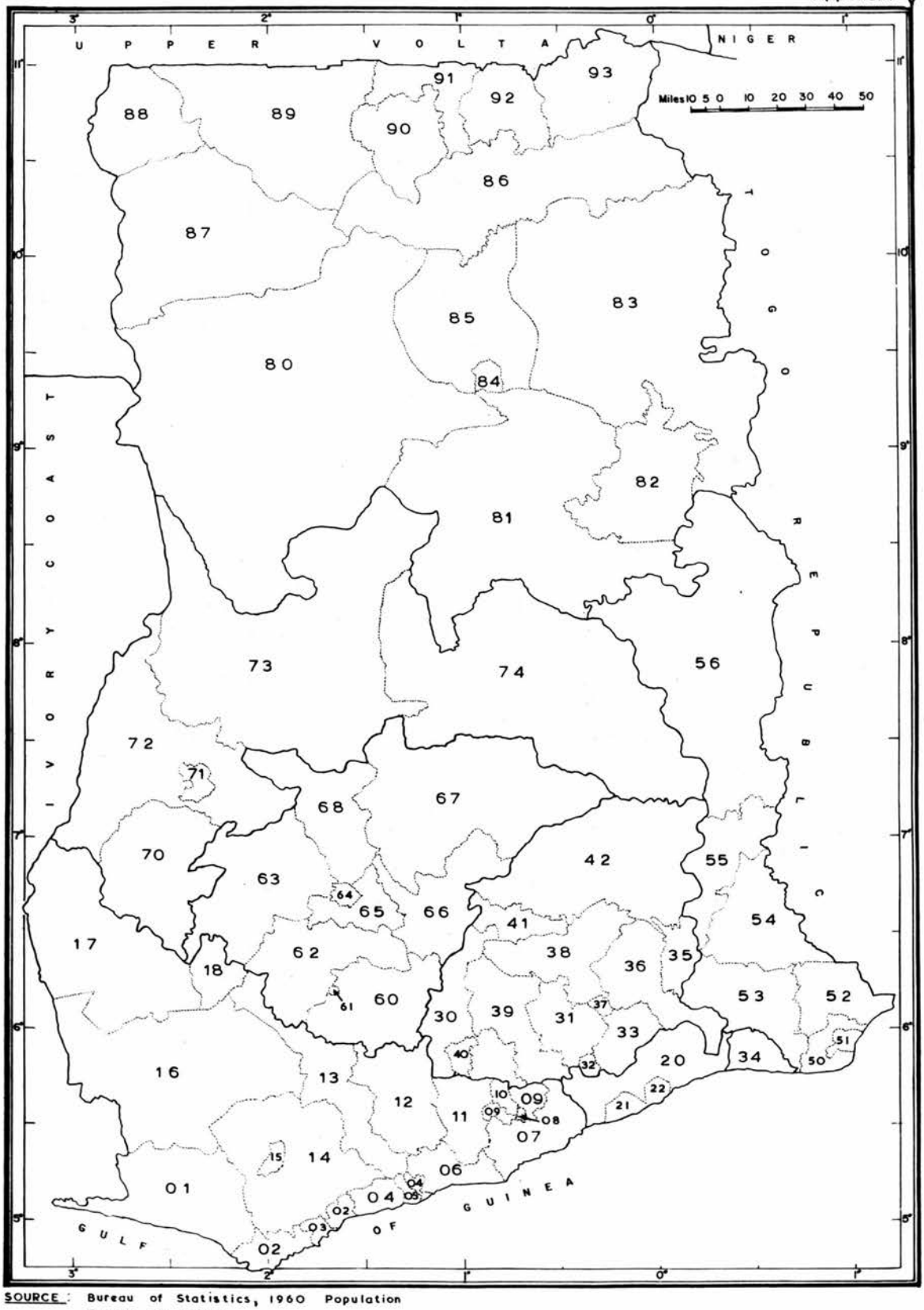
Date of enumeration and Total Population returned	Population Characteristics which were investigated on Census
1960, March 20th Total popln. returned: 6,726,815 Average cost per 1000 populn. enumerated £24.13.4[2]	Name of Person enumerated Sex Age in completed years only; 0 for infants less than 1 year Birthplace: a. Born in this town or village b. Born in another town or village in Ghana (specify town, or village & region) Country of Origin a. Ghana b. Outside Ghana (specify country) Tribe (of persons of African Origin only) Full-time education: a. Whether attending now; in the past; or never b. Type of School c. Highest Standard or grade attained Type of Activity a. Did you do any work for at least one day last month? b. If no, how were you mainly occupied? Industry: a. Name and address of establishment where you worked b. Major product or service of this establishment Occupation - What kind of work did you do? Employment Status: a. Self-employed b. Employee c. Family worker d. Other (specify)[1]

[1] Adapted from Form No. GP/V7607/11,500 ks./10L/59-60.

[2] It was highest in the Northern Territories, being about (£32.77) or approximately £32.152.4d. This was mainly due to higher transport costs. See 1960 Population Census of Ghana, General Report, Vol.5. p.305.

1960 CENSUS DISTRICTS : GHANA

Appendix V



SOURCE : Bureau of Statistics, 1960 Population Census of Ghana

APPENDIX V

Guide to the Code Numbers of Census Districts[1], 1960

Code Number	Name of District
01	Nzima-Evalue-Ajomoro-Gwira L.C.
02	Ahanta-Shama L.C.
03	Sekondi-Takoradi M.C.
04	Komenda-Edina-Eguafo-Abrem-Asebu L.C.
05	Cape Coast M.C.
06	Mfantsiman L.C.
07	Gomoa-Awutu-Effutu L.C.
08	Swedru Urban Council
09	Agona L.C.
10	Nyakrom-Nkum L.C.
11	Breman-Ajumako L.C.
12	Assin L.C.
13	Denkyira-Twifu-Heman L.C.
14	Wassaw-Fiase-Mpohor L.C.
15	Tarkwa-Abosso Urban Council
16	Amenfi-Aowin L.C.
17	Sefwi-Wiawso L.C.
18	Sefwi-Anhwiaso-Bekwai-Bibiani L.C.
20	Ga-Dangbe-Shai L.C.
21	Accra Municipal Council
22	Tema Development Corporation
30	Western Akim L.C.
31	South Akim Abuakwa L.C.
32	Nsawam Urban Council
33	Akwapim L.C.
34	Ada L.C.
35	Akwamu-Anum-Boso L.C.
36	Manya-Yilo-Osudoku
37	New Juaben Urban Council
38	East Akim Abuakwa L.C.
39	West Akim Abuakwa L.C.
40	Oda-Swedru Urban Council
41	South Kwahu L.C.
42	North Kwahu L.C.
50	Anlo South L.C.
51	Keta Urban Council
52	Anlo North L.C.
53	Tongu L.C.
54	Ho Urban Council
55	Kpandu L.C.

Code Number	Name of District
56	Buem-Krachi L.C.
60	Adansi Banka L.C.
61	Obuasi U.C.
62	Amansie L.C.
63	West Kumasi L.C.
64	Kumasi Municipal
65	Kumasi South L.C.
66	Kumasi East L.C.
67	Sekyere L.C.
68	Kumasi North L.C.
70	Brong-Ahafo South L.C.
71	Sunyani Urban L.C.
72	Brong-Ahafo Central L.C.
73	Brong-Ahafo North L.C.
74	Brong-Ahafo East L.C.
80	Western Gonja L.C.
81	Eastern Gonja L.C.
82	Nanumba L.C.
83	Eastern Dagomba L.C.
84	Tamale Urban Council
85	Western Dagomba L.C.
86	South Mamprusi L.C.
87	Wala L.C.
88	Lawra L.C.
89	Tumu L.C.
90	Builsa L.C.
91	Kassena-Nankani L.C.
92	Frafra L.C.
93	Kusasi L.C.

[1] cf. Census 1960, Vol. 5, p.9, Map II (b); p.30, Map I.

GLOSSARY OF SELECTED TERMS

Term		Definition
Birth rate	:	The ratio between the number of births per year and the total population in question.
Age-specific birth rates	:	Birth rates of women at specific ages.
Total birth rate	:	Birth rate which includes also still births.
Effective birth rate	:	Birth rate which excludes still births.
closed population	:	Population in a defined geographical area that experiences neither immigration nor emigration of population. In such a population all population changes result from births and deaths only.
Cohort	:	All persons born during the same defined period.
de facto population census	:	Population counted where found at time of census irrespective of usual or legal place of residence.
de jure population census	:	Population counted according to the usual place of residence.
Fertility rate	:	The ratio of total births during one year to the total number of women aged 15 to 44 years.
Total fertility	:	This includes still births.
Effective fertility	:	This excludes still births.
Age-specific fertility rate	:	Fertility of women at specified ages.
Labour dependence ratio	:	This indicates the dependence load of each able-bodied worker in the total population in question or the extent to which each worker provides for non-workers.
Labour participation rate	:	This is the per cent. of the total population that currently earn their own living.

Term		Definition
Index of Dissatisfaction or restlessness	:	This measures the gap between the scale of living and the standard of living of the individual.
Internal Logic of the population	:	The mental processes of a given population that determine its reaction to both internal and external stimuli, with special reference to the birth rate.
Reproduction rate	:	This refers to the rate at which mothers are replacing themselves with potential mothers. The gross reproduction rate includes deaths among baby girls; the net reproduction excludes deaths among female children before they have reached the age of reproduction.
Male Ratio	:	Number of males per 1,000 females
Motherhood Replacement rate	:	Measures the extent to which retiring mothers (i.e., females who are aged 39-44 years) are being succeeded by potential mothers aged 10-14 years. This may be computed directly from the census returns.
Optimum Population	:	That size of the population in a geographical area that is consistent with the most productive utilization of its resources and the highest possible level of living of its members.
Scale of living	:	The actual or achieved per capita flow of goods and services produced and consumed by the members of a given population.
Standard of living	:	The level of living to which the members of a given population individually or collectively aspire.

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